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RESERVE

TASK FORCE "ABLE" REPORT
Vol. IV of V - Copy 2 of 5
RESEARCH STUDIES

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY
JUL 8 1965
D & R-PREP.

AD-33 Bookplate
(1-68)

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LIBRARY

RESERVE

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V. RESEARCH STUDIES

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U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY

JUL 8 1965

C & R-PREP.

THE NATIONAL AGRICULTURAL LIBRARY

Costs for Fiscal Year 1962

Costs for each organizational segment were accumulated by the main types of expense. Subsequently, all costs of management and supervision were distributed to the organizational divisions and sections on a pro rate-basis of man years as follows:

1. Costs for Office of Director and Management Services were distributed to each organizational unit of the remaining services (Public, Technical and Field and Special Services).
2. Costs for the assistant director of each service were distributed to the organizational divisions and sections within the respective service.
3. Costs for each division chief were distributed to the sections within the division.

Upon completion of the above, all costs were reflected in the sectional organization related to the library functional operations of acquiring, cataloging and lending publications, plus the special projects and branch libraries.

There follows an outline of the functions by organizational section of the main library insofar as they relate to the acquisition and lending of publications, and the furnishing of reference service, together with the number of work units for the year.

Publication Selection Section

Function

To select publications for acquisition

Effective Work Unit:

Titles selected and ordered	8,556
-----------------------------	-------

Un-requested and un-ordered titles received and selected	<u>7,310</u>
---	--------------

Total acquired	15,866
----------------	--------

Total selections were 31,837 of which 15,866 were acquired as shown above, and 15,971 not acquired. During the following year of 1963 selections are expected to be even greater, although funds for acquisition of publications will be less. The selections not acquired are placed in a desiderata file under the theory that some day, when funds permit, the selections will be purchased. Since, during this two-year period, less than half the total selections are acquired, it seems unlikely that future fund allotments will provide for acquisition of current selections, let alone the accumulated deficit in the desiderata file. Therefore, selections in excess of acquisition (desiderata file) are not properly a work product and no cost value can be attached thereto. All costs must be borne by the selections acquired.



Order Section

Function - To order publications.
Work Units - Total titles ordered 8,556.

Exchange Section

Function - To arrange for exchange of publications.
Work Units - Exchange titles requested 1,899.

Division of Catalog and Records

Catalog Section

Function - To catalog publications.
Work Units - Titles cataloged 11,564.

Subject Heading Section

Function - To aid systematic cataloging.
Work Units - None. (Combined with Catalog Section)

Preparations Section

Function - To type, paste and other preparation of publications for shelving.
Work Units - Volumes accessioned 12,027.

Records Section

Function - To maintain records to identify and assure receipt of serial publications.
Work Units - Periodicals received and handled 399,787.

Public Services

Division of Lending

Function - To maintain, circulate and lend publications.
Work Units - Total loans 200,437.

Division of Reference

Function - To provide reference service.
Work Units - Reference questions answered 61,601.

Field and Special Services

Bibliography of Agriculture

Function - To plan, develop, compile and publish the Bibliography of Agriculture.
Work Units - Items indexed 90,215.



Work Unit Cost of Functions

	<u>Cost of Function</u>	<u>Work Units</u>	<u>Unit Cost</u>
Cost of Ordering, Cataloging and Preparing a Title for the Shelf			
Exchange Orders	\$ 20,826	1,899	\$
Gifts Ordered		245	
Purchases Ordered	43,612	6,412	
Selection of Above Orders	16,513	8,556	9.46
Total Ordered Acquisitions	80,951	8,556	
Catalog Section	76,937		
Subject Heading Section	10,579		
Total Cataloging	87,516	11,564	7.57
Preparation Section	51,515	12,027	4.28
Total cost of ordering, cataloging and preparing an ordered title for the shelf			21.31
Selection of Un-requested and Un-ordered Titles	14,147	7,310	1.93
Publication Purchase Price	43,654	6,412	6.81
Serial Records Section	108,989	399,787	.27
Public Services			
Division of Lending	284,283	200,437	1.42
Division of Reference	96,753	61,601	1.57
Field and Special Services			
Bibliography of Agriculture	202,447	90,215	2.24
Special Projects	115,026	--	--
Field Libraries	105,023	--	--
Total Cost	<u>\$1,190,304</u>		

Technical Services Library
Division of Work Units by Function

FY 1962

		WORK UNITS	
<u>Technical Services</u>			
Division of Acquisitions			
Purchases and Selection Section			
Selections ordered		8556	
Received and selected - not requested		7310	
Selections not yet ordered		<u>15971</u>	
Total selections		<u>31537</u>	
Exchange orders			
Gifts ordered		245	
Purchases ordered		<u>6412</u>	
Total - purchases, gift and exchange orders		8556	
Division of Catalog and Records			
Catalog Section			
Total titles catalogued		12200	
See Culture Library	-		
Beltville Library	107		
Lewis Library	<u>529</u>	636	
Total - Main Library		11564	
Preparations Section			
Total volumes accessioned		17560	
See Culture Library	6		
Beltville Library	723		
Lewis Library	<u>4804</u>	5533	
Total - Main Library		12021	
Records Section			
Total - purchases and accessioned		462954	
See Culture Library	1738		
Beltville Library	17904		
Lewis Library	<u>73555</u>	93197	
Total - Main Library		399781	

The National Agricultural Library
Department of Work Units by Function

FY 1962

[illegible]

The National Agricultural Library

Cost of Functions

FY 1962

	Cost of Functions	Work Units	Unit Cost
<u>Technical Services</u>	\$		\$
Division of Acquisitions			
Publishers Selection - Ordered	5214	8556	
" " - Received - Unrequested	7015	7310	
" " - Not yet Ordered	15425	15971	
Total	30660	31837	96
Exchange Orders	\$ 20526	1599	
Gifts Ordered	-	245	
Purchases Ordered	43612	6412	
Selection of Above	5214	8556	
Total Ordered Acquisitions	72652	8556	849
Division of Catalog and Records			
Catalog Section	76937		
Subject Heading Section	10579		
Total Cataloging	87516	11564	757
Preparations Section	51515	12027	428
			2034
Records Section	108989	399787	27
Publishers Purchase Price	43654		
" " By Order		6412	281
<u>Public Service</u>			
Division of Reading	251253	200437	142
Division of Reference	96753	61601	151
<u>Field and Special Services</u>			
Biography of Agriculture	202441	90215	224

National Agricultural Library
Fiscal Year 1962 Costs
Summary of Costs

	PERSONEL SERVICES	FRINGE BENEFITS	TRAVEL	OTHER COMMUNICATIONS	IDENTITY PRINTING
<u>PUBLIC SERVICES</u>	\$	\$		\$	\$
OFFICE OF ASST. DIRECTOR	1064960	77653			
DIVISION OF LENDING					
OFFICE OF CHIEF	1572080	114630		55131	
LOAN SECTION	1240916	90483		40261	
CIRCULATING UNIT	978811	71371		14570	
PERIODICAL UNIT	691147	50395		14570	
WINDOW UNIT	473605	35992		14570	
SUB TOTAL LOANS SECT	3404492	245211		84871	
MAINTENANCE SECTION					
BOOKSTACKS UNIT	4727396	344703		14870	
BINDERY UNIT	1255654	91557			1678127
WEEDING & INVENTORY	4669755	340500		14870	
SUB TOTAL MAINTENANCE	10652505	776760		29740	1678127
PHOTODUPLICATION SECTION					
ORDER PROCESSING UNIT	861640	62527		130513	
PHOTOGRAPHIC UNIT	1305022	90112			4507
SUB TOTAL PHOTODUPLICATION	2170162	158239		130513	4507
SUB-TOTAL DIVISION OF LENDING	17799529	1297870		300255	1692634
DIVISION OF REFERENCE					
OFFICE OF CHIEF	1000480	72950		40261	
GENERAL REFERENCE SECT.	3731596	272093		25391	
SPECIAL BIBLIOGRAPHIES	1719104	125310		25391	
NURSERY AND SEED TRADE CTR.	542560	39512		40261	
SUB TOTAL DIV. OF REFERENCE	6993740	509965		131304	
TOTAL PUBLIC SERVICES	\$ 25858279	\$ 1885425	—	\$ 431559	\$ 1692634

E COSTS		7		8		9		10	
OTHER COSTS	SUPPLIES & MATERIAL	EQUIPMENT	PUBLICATIONS	UNIDENTIFIABLE MISCL. OPER COSTS	TOTAL OTHER COSTS	TOTAL PERSONEL SERVICES AND OTHER COSTS			
	\$	\$		\$	\$	\$			
		3878		27646	109177	1174137			
		7248		51532	228521	1800601			
		10187		72626	213557	1454473			
		10029		71493	167763	1146579			
		6262		44648	116175	807322			
		5134		36603	92599	586207			
		31612		225370	590094	3994576			
		41882		295577	700032	5427425			
		11262		80254	1861230	3116834			
		32044		225439	615853	5255605			
		55188		607300	3177115	13829920			
28902	465319	7457		53163	253960	1115600			
28902	465319	9369		66793	670302	1975524			
28902	465319	16826		119956	924262	3094424			
28902	465319	140854		1004158	4919992	22719521			
		3878		27646	144735	1145278			15
		24051		171460	492995	4224591			
		10140		72294	233175	1952279			
		3889		27646	111308	653568			
		41958		299046	952213	7975953			
28902	\$ 465319	\$ 196690		\$ 1330850	\$ 6011382	\$ 31569611			

*National Agricultural Library
Fiscal Year 1962 Costs
Summary of Costs*

	1	2	3	4	5
	PERSONEL SERVICES	FRINGE BENEFITS	TRAVEL	OTHER COMMUNICATIONS	IDENTITY PRINTING
FIELD AND SPECIAL SERVICES	\$	\$	\$	\$	\$
OFFICE OF ASST. DIRECTOR	517440	37730			
DIVISION OF INDEXING AND DOCUMENTATION					
OFFICE OF CHIEF	2182600	159146		40261	
BIBLIOGRAPHY OF AGRIC.	11806010	56847	131938	70001	1730000
SPECIAL PROJECTS SECT					
ORIENTAL PROJECT	2219432	79747	96450	29970	163729
ENTOMOLOGICAL PROJECT	782080	57077		14870	
BIOLOGICAL PROJECT	3631242	341510		29740	62534
SUB TOTAL SPECIAL PROJECTS	6632754	454327	96450	74480	226263
SUB TOTAL DIV. OF INDEX AND DEC.	20621364	1504320	228388	184742	1956263
DIVISION OF FIELD SERVICES					
OFFICE OF CHIEF					
AGENCY FIELD LIBRARIES					
BEE CULTURE LIBRARY	1309920	95514	31170	40261	6705
BELTSVILLE LIBRARY	2325864	169593		40261	105750
LAW LIBRARY	2930016	213640		55121	55141
SUB TOTAL DIV. OF FIELD SERV.	6565800	478747	31170	135643	194229
TOTAL FIELD AND SPECIAL SERVICES	27704604	2020502	259558	320385	2130492
 SUMMARY					
OFFICE OF DIRECTOR & MGMT. SERV.	14769831	1075806	432037	275655	
PUBLIC SERVICES	25858229	1885428		431559	1652600
TECHNICAL SERVICES	24805731	1808734	101004	165393	
FIELD AND SPECIAL SERVICES	27704604	2020502	259558	320385	2130492
TOTAL	\$ 93138895	\$ 6790770	\$ 792599	\$ 1192992	\$ 3813126

6	7	8	9	10		
OTHER COSTS	Costs SUPPLIES & MATERIAL	EQUIPMENT	PUBLICATIONS	UNIDENTIFIABLE MISCL. OPER. COSTS	TOTAL OTHER COSTS COL 2 thru COL 10	TOTAL PERSONEL SERVICES AND OTHER COSTS
	\$	\$	\$	\$	\$	\$
		4550		11694	54274	571714
		34398		82938	316743	2499343
		234457		565305	3592548	15398558
		11475	59310	90900	531474	2750906
		11466		27646	111059	893139
	53001	75446	901462	181910	1651603	5282845
	53001	98387	960772	300456	2294136	8926890
	53001	367242	960772	948699	6203427	26824791
		22932	72784	55292	324661	1634551
		47533	691241	114648	1172056	3497920
		51608	409449	124430	912994	3843010
		122073	1173474	294370	2409711	8975511
	53001	494165	2134246	1254763	5667412	36372016
23902	46319	595971		66940	2986409	17756240
	22129	156690		1330520	6011352	31569611
	53001	559245	4365437	1205059	8227001	33032732
	494165	2134246		1254763	5667412	36372016
23902	\$ 546449	\$ 1535981	\$ 6499783	\$ 4397612	\$ 25592204	\$ 119030599

NATIONAL AGRICULTURAL LIBRARY
FISCAL YEAR 1962 COSTS
Summary of Costs

	1	2	3	4	5
	PERSONEL SERVICES	FRINGE BENEFITS	TRAVEL	OTHER COMMUNICATIONS	IDENTIFI- FICATION PRINTING
<u>TECHNICAL SERVICES</u>	\$	\$	\$	\$	
OFFICE OF ASST. DIRECTOR	517440	37730	101004		
DIVISION OF ACQUISITIONS					
OFFICE OF CHIEF	2019360	147244		55131	
PUBLICATIONS SELECTION SECT	1739864	126864			
ORDER SECTION	2073600	151198		25391	
EXCHANGE SECTION	1027200	74899		25391	
SUB-TOTAL - DIV. OF ACQUISITIONS	6860024	500205		105913	
DIVISION OF CATALOG AND RECORDS					
OFFICE OF CHIEF	1735880	126573			
CATALOG SECTION	5277984	354849		29740	
PREPARATION SECTION	3184950	232233		14870	
RECORDS SECTION	6848720	499381		14870	
SUBJECT HEADING SECT.	380733	27763		-	
SUB TOTAL DIV. OF CAT. & RECORDS	17428267	1270799		59480	
TOTAL TECHNICAL SERVICES	\$ 24505731	\$ 1808734	\$ 101004	\$ 165393	

	1	2	3	4	5	6
OTHER COSTS	SUPPLIES & MATERIAL	EQUIPMENT	PUBLICATIONS	UNIDENTIFIABLE MISCL. OVER COSTS	TOTAL OTHER COSTS	TOTAL PERSONNEL SERVICES AND OTHER COSTS
\$	\$	\$	\$	\$	\$	\$
		1510		11694	151938	669378
		9197		71243	282815	2302175
		8950		69557	205401	1945265
		15752	4365437	122250	4680058	6753658
		7138		55292	162720	1189920
		41097	4365437	318342	5330994	12191018
		6930		53659	187192	1923072
		28395		219951	662935	5940919
		24353		188739	460195	3645145
		50105		355122	952478	7801198
22129		406555		24522	481269	862002
22129		516635		875023	2744069	20172336
\$	\$	\$	\$	\$	\$	\$
22129	559245	4365437	1205019	8227001	33032732	

NATIONAL AGRICULTURAL LIBRARY
FISCAL YEAR 1962 COSTS
Summary of Costs

	1	2	3	4	5
	PERSONNEL SERVICES	FRINGE BENEFITS	TRAVEL	OTHER IDENTIFIED COMMUNICATIONS	PRINTING
<u>OFFICE OF THE DIRECTOR</u>	\$ 3924005	\$ 284972	\$ 340152	\$ 99741	
<u>MANAGEMENT SERVICES</u>					
OFFICE OF ASST. DIRECTOR					
DIVISION OF ADMINISTRATION					
OFFICE OF CHIEF	2440823	177975	78275	40261	
BUDGET AND FISCAL SECT.	2883360	210243		25391	
PERSONNEL SECTION	1292392	94236		40261	
GENERAL SERVICES SECT.	4229251	308300	13610	70001	
<u>TOTAL MANAGEMENT SERVICES</u>	<u>10845826</u>	<u>790834</u>	<u>91885</u>	<u>175914</u>	
<u>TOTAL SUPERVISION AND SUPPORT</u>	<u>\$ 14769831</u>	<u>\$ 1075806</u>	<u>\$ 432037</u>	<u>\$ 275645</u>	

COSTS		UNIDENTIFIABLE		TOTAL		TOTAL PERSONAL	
OTHER	SUPPLIES & MATERIAL	EQUIPMENT	PUBLICATIONS	MISCL. PER. COSTS	OTHER COSTS	SERVICES AND OTHER COSTS	
	\$ 250451			\$ 116998	\$ 1092344	\$ 5016349	
	55452			82938	437931	2878754	
	78853			111825	426315	3309615	
	35958			55292	228777	1521169	
	169167			239584	801242	5030293	
	345490			459942	1594065	12739891	
	\$ 595971			\$ 606940	\$ 2956409	\$ 17756240	

NATIONAL AGRICULTURAL LIBRARY
DISTRIBUTION OF COST OF SUPERVISION TO FUNCTIONAL ORGANIZATION
LIBRARY TASK FORCE
FISCAL YEAR 1962

		MAN YEARS	PERSONAL SERVICES \$	OTHER DIRECT \$	TOTAL DIRECT \$
<u>TECHNICAL SERVICES</u>					
OFFICE OF ASST. DIRECTOR		.423	5174.40	1519.35	6693.75
DIVISION OF ACQUISITIONS					
OFFICE OF CHIEF		2.577	20193.60	2928.15	23021.75
PUBLICATION SELECTION SECT.		2.516	17398.64	20540.1	19452.65
EXCHANGE SECT.		2.000	10272.00	1627.20	11399.20
ORDER SECT.		4.422	20736.00	3146.21	23882.21
PURCHASES				43654.37	43654.37
SUB TOTAL - DIV. OF ACQUISITIONS		11.515	65600.24	53309.94	121910.18
DIVISION OF CATALOG & RECORDS					
OFFICE OF CHIEF		1.942	17358.80	1871.92	19230.72
CATALOG SECTION		7.956	52779.84	6629.35	59409.19
SUBJECT HANDLING SECT.		1.557	3807.33	4512.69	5620.02
PREPARATION SECT.		6.827	31849.50	4601.95	36451.45
RECORDS SECT.		14.039	68487.20	9524.75	78011.95
SUB TOTAL - DIV. OF CAT. & RECORDS		31.651	174282.67	27440.69	201723.36
TOTAL - TECHNICAL SERVICES		43.589	\$ 248,857.31	\$ 82,270.01	\$ 330,327.32
SUMMARY					
GRADE OF DIR. & ASST. SERVICES		21.954	147698.31	29564.09	177562.40
PUBLIC SERVICES		48.139	258582.29	60113.52	318695.81
FIELD AND SPECIAL SERVICES		45.387	277646.04	86674.12	364320.16
TECHNICAL SERVICES		43.589	248857.31	82270.01	330327.32
TOTAL		159.069	\$ 931,383.95	\$ 258,621.74	\$ 1,190,005.69

() Represents deduction

DISTRIBUTION OF SUPERVISION			COST						
DIRECTOR AND ASST. SECY.	ASST DIRECTOR	DIVISION CHIEFS	OF FUNCTION						
	\$	\$	\$						
54779	(724157)		—						
333715	43262	(2679155)	—						
325519	42103	752843	3066030						
255985	33605	600130	2082653						
572645	74163	1326182	4361211						
			4365437						
1491150	193133	—	13875331						
251487	32392	(2206951)	—						
1030294	133281	589256	7693756						
114566	14869	66209	1057946						
884090	114701	507599	5151535						
1518036	235775	1043887	10895896						
4095723	531024		24802133						
\$ 5644732	—	—	\$ 35677464						
(17756240)	—	—	—						
6233912	—	—	35103563						
5577556	—	—	42249572						
5644732	—	—	35677464						
			11703059						

NATIONAL AGRICULTURAL LIBRARY
DISTRIBUTION OF COST OF SUPERVISION TO FUNCTIONAL ORGANIZATION
LIBRARY TASK FORCE
FISCAL YEAR 1962

	MAN YEARS	PERSONAL SERVICES	OTHER DIRECT	TOTAL DIRECT
<u>OFFICE OF DIRECTOR</u>	4.232	\$ 39240.65	\$ 10923.44	\$ 50163.49
MANAGEMENT SERVICES OFFICE OF ASST. DIRECTOR				
DIVISION OF ADMINISTRATION				
OFFICE OF CHIEF	3.000	24408.23	4379.31	28787.54
BUDGET & FISCAL SECT.	4.545	28833.60	4263.15	33096.75
PERSONNEL SECT.	2.000	12923.92	2237.77	15161.69
GENERAL SERVICES SECT.	8.677	42292.51	8010.42	50302.93
SUB TOTAL - MANAGEMENT SERVICES	17.722	108458.26	18940.65	127398.91
TOTAL - OFFICE OF DIR. & MGMT. SERV.	21.954	\$ 147695.31	\$ 29864.09	\$ 177559.40

ACCT. SERV.	DIV. CHIEFS	CHIEFS
-------------	-------------	--------

5016349

12739591

177 562 40

NATIONAL AGRICULTURAL LIBRARY
DISTRIBUTION OF COST OF SUPERVISION TO FUNCTIONAL ORGANIZATION
LIBRARY TASK FORCE
FISCAL YEAR 1962

	MAN YEARS	PERSONAL SERVICES	OTHER DIRECT	TOTAL DIRECT
<u>HEAD AND SPECIAL SERVICES</u>		\$	\$	\$
OFFICE OF ASST. DIRECTOR	.423	517440	54274	511714
DIVISION OF INDEXING & DOCUMENTATION				
OFFICE OF CHIEF	3.000	2152600	316743	2499343
BIBLIOGRAPHY OF AGRIC.	20.448	11506010	3592548.	15395558
SPECIAL PROJECTS SECTION				
ORIENTAL PROJECT	3.288	2219432	531474	2750906
ENTOMOLOGICAL PROJECT	1.000	782080	111059	893139
BIOLOGICAL PROJECT	6.580	3631242	1651603	5292845
SUBTOTAL-SPEC. PROJECTS	10.868	6632754	2294136	8926890
SUBTOTAL DIV. OF INDEX & DOC.	34.316	20621364	62071127	26824791
DIVISION OF FIELD SERVICES				
OFFICE OF CHIEF				
AGENCY FIELD LIBRARIES				
BEE CULTURE LIBRARY	2.000	1309920	324661	1634581
BELTSVILLE LIBRARY	4.147	2325864	1172056	3497920
LAW LIBRARY	4.501	2930016	912994	3547010
SUBTOTAL-FIELD LIB.	10.648	6565800	2409711	8975511
TOTAL FIELD AND SPECIAL SERVICES	45.257	\$ 27704604	\$ 8667412	\$ 36372016

DISTRIBUTION OF SUPERVISION		POST							
DIRECTOR AND CHIEF, SENIOR	ASST DIRECTOR	DIVISION CHIEFS	OF FUNCTION						
\$	\$	\$							
547 78	(626492)	-							
388497	41976	(2929916)	-						
26479 81	2950501	19131 11	202447 64						
425 93	45734	307630	35300 63						
129499	13752	93754	11301 74						
852103	92094	615261	68423 03						
1407395	151610	1016645	115025 40						
4443573	478640	-	317473 04						
255998	21566	-	19211 45						
537032	57637	-	40925 59						
592515	62649	-	44555 34						
1378905	14785	-	105022 68						
1577556	-	-	\$ 422 49 72						

NATIONAL AGRICULTURAL LIBRARY
DISTRIBUTION OF COST OF SUPERVISION TO FUNCTIONAL ORGANIZATION
LIBRARY TASK FORCE
FISCAL YEAR 1962

	MAN YEARS	PERSONAL SERVICES	OTHER DIRECT	TOTAL DIRECT
<u>PUBLIC SERVICES</u>		\$	\$	\$
OFFICE OF ASST. DIRECTOR	1.010	12 649 60	1 091 77	11 741 37
DIVISION OF LENDING				
OFFICE OF CHIEF	1.814	15 720 90	2 285 21	18 006 01
LOAN SECTION	2.627	12 409 16	2 135 57	14 544 73
CIRCULATION UNIT	2.556	9 758 11	1 677 63	11 435 74
PERIODICAL ROUTING UNIT	1.615	6 911 47	1 161 75	8 073 22
WINDOW UNIT	1.324	4 956 08	925 99	5 882 07
SUB TOTAL - LOAN SECT.	8.152	34 644 82	5 900 94	39 545 76
MAINTENANCE SECTION				
BOOKSTACKS UNIT	10.800	47 273 96	7 600 32	54 874 28
BINDING UNIT	2.904	12 556 54	15 612 30	31 165 34
WEEDING & INV. UNIT	8.263	46 697 55	6 158 53	52 956 08
SUB TOTAL - MAINTENANCE SECT.	21.967	106 528 05	31 771 15	138 300 20
PHOTODUPLICATION SECT.				
CARD PROCESSING UNIT	1.923	5 616 40	2 539 60	8 156 00
PHOTOGRAPHIC UNIT	2.416	13 085 22	6 703 02	19 788 24
SUB TOTAL - PHOTO SECT.	4.339	21 701 62	9 242 62	30 944 24
SUB TOTAL - DIV. OF LENDING	36.322	177 995 29	49 199 92	227 195 21
DIVISION OF REFERENCE				
OFFICE OF CHIEF	1.600	10 004 50	1 447 35	11 452 15
GENERAL REFERENCE SECT.	6.202	37 315 96	4 929 95	42 245 91
SPECIAL BIBLIOGRAPHY SECT.	2.615	17 191 04	2 331 75	19 522 79
NURSERY & SEED CATALOG	1.000	5 425 60	1 113 05	6 538 65
SUB TOTAL - DIV. OF REFERENCE	10.517	69 937 10	9 822 13	79 759 23
TOTAL - PUBLIC SERVICE	48.139	\$ 255 552 29	\$ 60 113 52	\$ 315 665 81

DISTRIBUTION OF SUPERVISION			COST
DIRECTOR AND MOUNT SERV.	ASST. DIRECTOR	DIVISION CHIEFS	OF FUNCTION
\$	\$	\$	
129499	(1303636)		
241386	52147	(2094134)	
340194	74357	161249	2030223
334554	71710	157860	1710218
209141	44324	95424	1159211
171457	36502	79577	873743
1055676	226833	496310	5773395
1395590	295533	655464	7780015
376065	80825	175907	3749651
1070050	229136	502592	7086356
2844705	607494	1333963	18616082
249027	52145	117270	1534044
312869	66485	146589	2504762
561896	118637	263561	4038811
4703663	1005104	—	28425258
129499	27316	(1302090)	—
503152	172050	822920	6022743
335640	71700	346357	2708976
125499	27376	132813	943556
1400790	295532	—	9675275
6233952	—	—	38103563

TASK FORCE ORIENTATION AND INFORMATION RETRIEVAL EDUCATION
OF NATIONAL AGRICULTURAL LIBRARY TASK FORCE ABLE

April 24-May 31, 1962

April 24 and 25

Films were used to show graphically some of the problems of Information Storage and Retrieval. Talks by Library staff members dealt with the different phases of information dissemination with special reference to the Agricultural Library's functions. Subjects discussed were:

Technical Processes	- Miss Shachtman
Storage dissemination	- Miss Carabelli
Subject analysis	- Mrs. Bryant
Storage Retrieval	- Mr. Lulich
External Relations	- Mr. Payne

The talks by Library Staff members on the Library's functions and problems were informative and helpful to members of the Task Force. Some of the highlights of these talks are stated briefly below:

Prominent systems and techniques for information storage and retrieval have developed only in recent years. Mrs. Bryant described the following:

1. Zator descriptors
2. Peekaboo Cards--uses item numbers on term cards. Terms indicated by light coming through at points where there are pertinent items.
3. Specialized coding and scanning devices such as non-fixed field punching, Luhn scanner.
4. ASTIA system of descriptors.
5. GE Search Comparator--makes sequential search on tape for natural language.
6. Ralph Shaw's "Rapid Selector" and similar machines, such as "File Search."
7. Automatic Indexing and Abstracting (mainly under Luhn et. al. at IBM).

Miss Shachtman spoke briefly on experimental attempts to automate technical processes at the Library of Congress and at IBM Advanced Systems Library, San Jose, California. She did not seem to think that much of lasting value had been accomplished in these experiments.

Various libraries have studied computer systems, but only a small number have thus far used them to any great extent. Books in ten Monsanto Company libraries are carded by computers. The Decatur, Illinois, Public Library uses IBM for ordering, etc. A study by the New York State Library determined that operations time would be doubled by computer systems. The University of Illinois and General Electric are trying to develop a workable system for libraries, but have concluded that the change would raise costs considerably.

Mr. Payne said that in regard to external relations the National Agricultural Library is concerned with mode of cooperation between USDA and State Agricultural Experiment Stations, especially in coordination of preparation of bibliographies and similar operations. He also mentioned the field libraries, the USDA Law Library, and the sub-unit at the Plant Industry Station at Beltsville.

Mr. Shipley said that the Division of Lending of the National Agricultural Library develops policies and procedures for making publications available to users, including photoduplication, and is concerned with maintenance and preservation of published materials. The Division of Reference provides reference services designed to specific requests, and compiles and prepares specialized bibliographies.

Several important problems based on facts and experiences of speakers emerged from the first two days of the Task Force's existence. They are defined briefly in the following paragraph:

Proliferation of today's information material has brought about difficulties in such library procedures as bibliographies, indexing, abstracting, analysis, listing, cataloging, circulating, etc. These

problems cannot be solved with the machines available today. Classifications of library materials would have to be revised for computer use. There should be cooperation between libraries--states, government agencies--to prevent duplication of bibliographies. Preservation of books, periodicals, reports and other valuable literature on agricultural subjects has become an important feature of library work, largely owing to poor paper used. Studies of microfilm, micro-cards or microprint, with laminated materials, were recommended. Need for better methods of preservation was pointed out as a part of the Task Force's job. Other features emphasized for immediate study, to improve efficiency of library operations, were the problem of mechanical translations and ways to improve the National Agricultural Library's photoduplication system.

April 26 (Thursday) and April 27 (Friday)

Members of the Library staff escorted Task Force members on a tour of the Library, explaining briefly the work of each division, section and unit. The tour included the Law Library which serves all USDA lawyers. This sub-unit of the National Agricultural Library, maintained in and for the Office of the General Counsel, contains the following types of material:

- Congressional Record
- Federal Statutes
- Federal Register
- Legal text books and periodicals
- States' reports of cases
- States' Laws and Codes

This "Law Library" does its own ordering and cataloging. It services twenty-one field offices, each of which has the same reference materials.

It was impossible to take notes while on tour, but it was learned that "Serials are the most important material in the Library" and that the Bibliography of Agriculture goes to 290 foreign libraries.

After the tour of the Library, the Work Groups were assigned quarters in or adjacent to some part of the Library. After becoming installed in quarters, groups engaged in discussions of ways to conduct studies and factors to be kept in mind throughout. Task Force members were advised to work through Mr. Foster Mohrhardt in collaborating with outside agencies, and with Mr. McCormick on reports. Tours and lectures by specialists were arranged to acquaint the Task Force with all phases of the problems. Work groups were asked to consider Land Grant Colleges as sharers of computer systems. A Questionnaire was discussed to learn who uses the National Agricultural Library, how many, how necessary to them is the information they seek, and of what benefit to the agricultural sciences. The Questionnaire was designated as the function of the System Requirements Group. Various approaches to be used as a basis for getting the information from users of the Library were discussed at length by that Group.

April 30, (Monday)

Discussions and development of ideas for the Questionnaire were continued by members of the System Requirements Group under the leadership of Dr. Anderson. A lecture by Joseph Becker, Central Intelligence Agency, then was presented before all members of the Task Force. Mr. Becker told of present achievements in automation and attempts to adapt such systems to library operations and information such as printed data, analysis, cataloging, indexing, bibliographies, filing, and handling materials on shelves. He pointed out successes with automation of source data by the punch paper (machine recording) method, but knew of no method as yet that can deal with automation of printed matter. He did point out, however, that machines can discriminate digits and letters--key words--but not sentences. He told of some experiments which are investigating speaking by machines with some success. He told of the recording of a page of written material indicating words used most frequently

(identifying the index terms). He also mentioned attempts to abstract mechanically by picking out the five most important sentences.

May 1 (Tuesday)

A tour to the National Library of Medicine, Bethesda, was of great value and interest to members of the Task Force. Mr. Seymour Tane discussed that Library's present system of preparing issues of INDEX MEDICUS and Dr. Jerome Rogers, Director, discussed the proposed system, called "MEDLARS." Historically, the account given of the Medical Library's experiences were of interest to the Task Force. Up until 1957 the preparation of INDEX MEDICUS was an operation almost identical with the present production of the Bibliography of Agriculture. There was a ceiling on the number of items that could be included per year, even on a 24-hour working basis. A grant from Ford Foundation for a two-year study--to investigate mechanization of the process--resulted in the January, 1960, issue of MEDICAL SCIENCE appearing as the first product of the new system.

Use of punched cards was considered by the National Library of Medicine, but the number required is too great, estimated at 4,000,000 a year, and the idea was discarded. It led to better procedures, however, and further studies are now being carried out to develop a system that will handle the Library's entire operations.

At present in the National Library of Medicine, the journals received are classified by language and subject. They are then distributed to professional indexers who scan, abstract, read carefully, and then utilize a pre-compiled medical subject-list of medical terms for the machine "cataloging." The average number of these terms per article is two (2), with a range from one (1) to eight (8).

The Task Force was escorted on a tour of the Library of Medicine with special attention given to features of the new building designed for modernization of operations. The tour ended in the offices of

Dr. Rogers, Director, who contributed an hour-long lecture and discussion of automation systems as adapted or not-adapted to the National Medical Library, and of the MEDLARS plan in particular.

In the plan there will be three products from MEDLARS: INDEX MEDICUS; recurring bibliographies, possibly as many as 50 different ones at frequent intervals; and one-question-one-shot answers. It is thought that there is a possibility that the number of entries per article may increase to the point where an average will be as high as 10 terms ("access points").

It is expected that INDEX MEDICUS for January, 1964, should be produced by the new system being designed and assembled by General Electric for the National Library of Medicine.

May 2 (Thursday)

A lecture and discussion of experiences of the Library of Congress in studying automation and/or mechanization for libraries was presented before the Task Force and members of the National Agricultural Library staff by Mr. Dubester. He gave details of a study made by specialists employed by the Library of Congress with a \$100,000 grant from the Council of Library Resources. Here are given some of the highlights of the study as described by Mr. Dubester:

The study team surveyed costs and found that all automation systems cost more. They studied the advantages in improved functions; concluded that an automation system would involve eliminating unnecessary operations to pay for the automation. They located functions that take most time, such as fingering through card files, and worked out costs per search. They studied the benefits of eliminating duplication in Cataloging (there are about 50,000,000 items in the Library of Congress.) They studied projecting into the future the benefits of automation in cataloging. In the end they concluded that requirements constitute the basis to be sought. "What do we want with an automatic Library? To make it easier for the user? Or, to make it easier for the librarian?"

The Library of Congress study resulted in the conclusion that the storage capacity of computers is small--"wouldn't hold the Library of Congress catalogs." "Library of Congress would need about a thousand machines--would cost five million dollars to automate the whole catalog--mail by jet plane from New York to San Francisco would be cheaper than a telephone request answered by computer." Mr. Dubester's advice to the Task Force was expressed thus: "Find out what the library of the future is to be. No library should mechanize for the present, but for the future."

May 3 (Thursday)

Dr. Adkinson of the Office of Science Information, National Science Foundation, helped the Task Force a great deal by contributing a lecture on research intelligence and its dissemination as related in particular to library systems. He first congratulated USDA's information system and pointed out the Department's international responsibilities in this field. He then defined clearly the role of the National Science Foundation--to provide or make provision for all research in a coordinating but not an operating research agency. The Foundation proposes to strengthen good information systems, to help and advise other agencies but not to dictate to them. He spoke of the importance of identifying the goal of the National Agricultural Library, that it should be considered a nationwide system, with close relations with other national libraries and prepared to carry on a continuous cooperative program with international libraries. Agricultural information published in English versus other languages, he said, is "fifty-fifty." "Improve indexing and bibliographies before you choose a machine," he cautioned, "Otherwise there will be millions going down the drain." He further cautioned "A machine is a dumb thing. It could help in selecting, arranging, etc. But it cannot assist in actual library research."

To partially meet the science information glut, Dr. Adkinson enumerated some of the changes needed before it can be furnished quickly

to all scientists: We need better titles, more informative ones, for use in machines. We need an abstract with every paper, and some method of selectiveness in furnishing titles to leaders of science (there are about 2,000 such leaders), Dr. Adkinson said. Leaders of science depend on reprints, meetings, letters, etc., to keep up to date; while below that the scientists depend more on libraries.

May 8 (Tuesday)

The Task Force went to the Patent Office for a meeting with, and a lecture from Mr. Frome of the Research and Development Division. His subject was Retrieval of Information by the Division which is responsible for the storing of the world's literature on patents.

Mr. Frome appeared to be thoroughly familiar with computers and their use in information storage and retrieval. He described input procedures where card punchers do not need to look up codes but type in names and terms which are converted to codes on punch cards through computer look-up. He urged that the National Agricultural Library aim for a goal of 25 access points per article indexed, as that would give precise retrieval at a cost very little more than indexing with 10 access points. He gave a detailed account of steps for implementation of a computer scheme for a library from the analyzer's part in determining the key works, through punching, costs in personnel, cards, machines, etc., to bibliography making and easy access to all information in the library.

The importance of the analyzers was discussed. Mr. Frome was of the opinion that analyzers of material for computer use should be highly skilled and with sound education, as well as experienced enough to realize the importance of the analysis. In his plan to put information about 100,000 insecticides on tape, he had 40 chemists engaged in analyzing literature for the development of access points to patents.

Mr. Frome said he would be glad to assist on technical problems and design requirements, if his services were needed in future. He

referred the group to the Patent Office "Revised Steroid Search System Coding Manual" for further insight into the Patent Office activities in the field of information storage and retrieval.

May 11 (Friday)

The Task Force spent the afternoon at the Bureau of Standards to hear discussions of the Bureau's activities that are in any way applicable to retrieval of scientific information. Dr. Sam Alexander, Director of the Data Processing Systems Division, gave a detailed account of the Division's work which is of utmost importance to any Federal agency planning use of computers or other machines for information storage and retrieval. Current and recent projects of the Division include: development of a design for the Bureau of Ships system for recovery of correspondence; recovery of microfilm through a machine of the E-K Lodestar type; automatic ordering--probably for the Department of Defense; and a system for looking up chemical compounds by name and structure and spotting chemicals of given properties or having specified structural attributes. A basic problem in which the Division is concerned is that of putting graphic and tabular information into machine usable form.

In discussing the Division's work of designing and building computers and putting them into operation, Dr. Alexander said that although equipment amounting to \$500,000,000 to \$400,000,000 was sold last year, much caution and revision is required even in computers for straight data work; and thus far the machines do not show up too well in Library work.

The Division keeps records on all known research on information communications and processing techniques. The techniques include: 1. machine translation; 2. device for character recognition; 3. facsimile recovery and reproduction; and 4. relation of automation theory to information retrieval problems.

Mrs. Marden, assistant to Dr. Alexander, explained some of the rudimentary devices for information storage and retrieval, including the Peekaboo card system.

The third speaker, Mr. Patrick Doyle, is working as a consultant with the Office of Technical Services, Department of Commerce. He is trying to develop an automatically produced publication-announcement bulletin in which it will be easy to find desired material. It appears that the KWIC type of system is among those being considered, and that an author index and a journal index may be required in addition to the title index. Mr. Doyle was engaged in a project to prepare punch cards to put in a computer for an index for NATIONAL AERONAUTICS at one stroke. This would lessen costs considerably and Mr. Doyle recommended such a system for the National Agricultural Library and offered his services for guidance if it should be considered.

A fourth speaker is working on development of a machine of the "Rapid Selector" type, with material stored on file and retrieval by means of code recognition. He has also been working on refinement of the E-K Lodestar, a device for rapid retrieval and reproduction of file. Features under consideration include: 1. subject-matter search of the film; 2. subject-matter search on the film itself, as on the Rapid Selector; 3. hard copy production of film strips; and 4. production of copies of film strips.

In a tour of the research laboratories and testing rooms, the Task Force observed several types of computers and other machines--the Rapid Selector, a Lodestar such as is used by Sears Roebuck, another machine that can be stopped to make hard copies, the "Recordac," just completed, the SEAC, oldest computer in existence, used now only for experimental work, and the magnificent new "Pilot," estimated to be 100 to 1,000 times faster than the SEAC.

May 14 (Monday)

A Remington Rand demonstration of the UNIVAC set-up (the ASTIA system) was presented in a USDA conference room for members of the

Task Force and the Library staff. The demonstrators gave some results of their experiences with information storage and retrieval, especially storage, and functions and problems of analyzers in getting the information into the machines. In this work, an analyzing division is needed to read and sort the scientific reports and other material into subjects. A thesaurus is needed--a thesaurus of terms used by scientists of different fields--for use in assigning descriptors, and for automatic indexing. Abstracts can be arranged for publication by machine; group papers for meetings can be arranged into sessions, and sessions can be scheduled. The first Index was produced by UNIVAC. It is not recommended, however, for a Retrieval System such as is needed by the National Agricultural Library, according to the demonstrators.

May 15 (Tuesday)

A trip to ASTIA (Armed Services Technical Information Agency) occupied the morning, as Task Force members toured installations for study of the system used to produce bibliography reference, announcements, semi-monthly and semi-quarterly documents, important reports and other printed materials required by the Armed Forces around the world.

When reports are received in ASTIA they are all microfilmed, the microfilm is retained as a permanent record, and the original report copies (ten are required) are used, except for the master copy, to supply working requirements. If a report is considered inactive, all copies are discarded except the microfilm. Reports that require more than ten copies are duplicated by Xerox plate and then multilithed. About 50,000 reports are processed each year.

Colonel Vaun told of plans to investigate the broad problem of handling scientific information, known as the "19 Point Program." ASTIA will utilize the services of 500 representatives of industry,

apparently on a rotation basis, in a 5-year study. Invitations have gone out for 200 graduate students to conduct research in the problem. Fifty will receive PhD's, and 150 will receive Masters degrees as a result. It evidently is the beginning of a broad plan to coordinate ASTIA's information with information from industries, universities, and other sources.

May 31 (Thursday)

Mr. Heiliger, University of Illinois Librarian, Chicago, talked to Task Force members on his library's plan to automate certain phases of operations. His main point was that analyses of library functions (flow charts, etc.) are best carried out by personnel of the Library. The results of this study have been published.

C I R C U L A T I O N

LIST OF CHARTS AND STATISTICAL TABLES

DISCHARGE OF MATERIAL FROM NAL

Discharged to Users in a 3 month period:

- Table D 1 By Form of Material and by User Groups
- D 2 By Origin of Material
- D 3 U.S. Department of Agriculture User Group by Agency
- D 4 Number of Organizations/Individuals and Frequency of Filled Requests

Age of Material Discharged:

- Table D 5 Pieces Published in Specified Periods, by User Groups
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- Fig. D 7 Age of Material by User Groups: U.S. Department of Agriculture, Other than USDA, and All Users

Classification and Frequency of Use of Material Discharged:

- Table D 8 Number of Titles and Total Requests by Classification Groups.
- D 9 Frequency of Requests for Titles by Classification Groups
- - Frequency List of the 151 Titles Requested 10 Times or More
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DISCHARGE OF MATERIAL FROM THE NATIONAL AGRICULTURAL LIBRARY

An Analysis of Material and Users in a three month period in 1962

GENERAL

All material that was discharged to users by NAL in a three month period has been analyzed according to:

1. Material Form:
Loans, rapid copy in lieu of loan, and microfilm or photocopy in lieu of loan.
2. Origin of material
3. Users:
 - A. U.S. Department of Agriculture, by agency.
 - B. Other U.S. Government and International.
 - C. Educational Institutions.
 - D. Private Organizations, Businesses, and Local governments.
 - E. Foreign Governments.
 - F. Individuals.
4. Age or Material discharged
5. Material classified according to call number, a frequency count of the number of times the publication was discharged and identification of publications discharged 5 or more times.

MATERIAL FORM

Of the material discharged to users in a 3 month period in 1962, 70 percent was loaned through circulating to users (not including NAL staff), 4 percent was through interlibrary loan, and 26 percent in the form of copy in lieu of loan. The 26 percent consisted of 17 percent Rapid Copy and 9 percent microfilm or photocopy. For the Department of Agriculture users, 74 percent of the material was discharged through loan (circulated). The copy in lieu of loan was 25 percent Rapid Copy, and less than 1 percent was microfilm or photocopy. Detail of form by user groups is shown in Tables D 1 and D 3.

National Agricultural Library
Discharges to Users in a three month period in 1962
by Form of material and by User group

User Groups	Loans				Rapid Copy in Lieu of Loan		Microfilm & photocopy in Lieu of Loan		Total Requests Filled	
	Circulated to Users <u>1/</u>	Pct.	Pieces	Interlibrary	Pct.	Pieces	Pct.	Pieces	Pct.	Pieces
U.S. Govt. and International:										
Dept. of Agriculture	72.3		10,590	-	97.3	3,589		81	68.0	14,260
Other government and International	16.8		2,454	543	0.4	15		12	14.4	3,024
Sub-Total	89.1		13,044	543	97.7	3,604	5.0	93	82.4	17,284
Other:										
Individuals			607	-		52		681		1,340
Private Organizations, Business and Local Govts.			420	117		14		542		1,093
Educational Institutions			543	140		18		138		839
Foreign			26	17		1		388		432
Sub-Total	10.9%		1,596	274	2.3	85	95.0	1,794	17.6	3,704
Grand Total ...	100.0%		14,640	817	100.0	3,689	100.0	1,842	100.0	20,988
Form of material, % of total			69.8%	3.9%		17.5%		8.8%		100.0%

1/ Not including NAL Staff.

ORIGIN OF MATERIAL

As a basis for determining the language of the discharged material, publications loaned to users during the 3 month period were classified to show: (1) published in the United States, (2) published in English speaking countries except the United States, and (3) published in all other countries. The country in which the documents are published will provide a satisfactory basis for classifying material into English or foreign language. The list of Serials Currently Received in the Library, issued July 1, 1957 (Miscellaneous Publication 765) was used to determine where the document was published. Data omit interlibrary loan or copy in lieu of loan.

The above analysis showed that 63 percent of the material loaned to users during the 3 month period was published in the United States, and 37 percent outside the States. There was 27 percent published in other than English speaking countries.

Table D 2
National Agricultural Library
Discharges of Loans to Users in a three month period in 1962
by Origin of Material

User Groups	Percent By User	Place of Publication			Total
		United States	English Speaking except U.S.	Other Foreign	
	Pct.	No.	No.	No.	No.
USDA Agencies	72.3%	6876	1018	2696	10590
Other U.S. Govt.	16.8%	1369	342	743	2454
Other Users	10.9%	1066	81	449	1596
Total	100.0	9311	1441	3888	14640
% By Origin of Material		63.6%	9.8%	26.6%	100.0

USERS

Out of a total of 20,988 requests filled in the 3 month period the Department of Agriculture accounted for 68 percent of the total. Other U.S. government and international organizations accounted for 14 percent with all other users totaling 18 percent.

U.S. Department of Agriculture:

In the 3 month period analyzed, the Department requests that were filled totaled 14,260 (68%). Material was supplied to personnel in

NATIONAL AGRICULTURAL LIBRARY
Material Discharged to Users in a three month period in 1962

Total Requests filled for the Department of Agriculture by Agency

USDA Agency	Loans Circulated to Users		In Lieu of Loan Rapid Copy		Loan Micro- film, Photo- copy	Total Requests Filled	
	Pct.	Pieces	Pct.	Pieces	Pieces	Pct.	Pieces
1. ARS	43.2	4570	46.7	1675	48	44.1	6293
2. FS	7.9	836	50.3	1805	-	18.5	2641
3. ERS	19.0	2007	0.1	3	-	14.1	2010
4. AMS	6.3	665	2.0	70	32	5.4	767
5. FAS	5.3	559		-	-	3.9	559
6. SCS	3.4	356		33	1	2.7	390
7. REA	2.3	243		1	-	1.7	244
8. ASCS	2.1	226		-	-	1.6	226
9. FES		178		1	-	1.3	179
10. OGC		127				0.9	127
11. SRS		119				0.8	119
12. INF		116				0.8	116
13. FCA		113				0.8	113
14. FCS		78				0.5	78
15. SEC		77				0.5	77
16. FHA		68				0.5	68
17. MASD		55				0.4	55
18. Administ. Dept.		47				0.3	47
19. CSESS		39		1		0.3	40
20. Grad. School		38				0.3	38
21. P&O		27				0.2	27
22. FCIC		19				0.1	19
23. ICAC		11				0.1	11
24. ORAD		9				0.1	9
25. CEA		7				0.1	7
Total	100	10,590	100	3589	81	100	14,260
Form of material % of total		74.2%		25.2%	0.6%		100%

25 agencies but Agricultural Research Service (ARS) was the leading user with 6,293 pieces withdrawn or 44 percent of the Department total. For ARS, about 1/4 of the material was Rapid Copy and the other 3/4 was documents loaned, the same relationship shown in the form of material for all of the Department. The relationship was reversed for the Forest Service, the second largest Department user (18%). About 2/3 of the material withdrawn was Rapid Copy in lieu of loan and 1/3 was documents loaned. Economic Research Service was the third ranking user in the Department, accounting for 14 percent of the Department's material, practically all of which was in the form of documents loaned. The other 22 agencies accounted for the remaining 23 percent, with no one agency accounting for more than 5 percent of the material.

Other than "U.S. Government and International Organizations":

There were 3,704 requests filled for this group. About half of the material was copy in lieu of loan, with microfilm or photocopy making up most of this copy form. Individuals made up the largest segment of this group accounting for 1,340 requested filled, followed by private organizations, businesses and local governments with 1,093 requests filled, Educational Institutions with 839 and foreign governments with 432.

To get some measure of the number of organizations or individuals outside of the Government who received material from NAL as well as the frequency of requests within the 3 month period, an analysis was made of the material withdrawn by this user group. This detail is shown in Table D 4.

There was an average of 4 requests filled per organization or individual. Following are the averages by user groups, with the highest number of requests filled for one individual or organization in parenthesis: Private organizations, businesses and local governments 6.7 average (91) requests filled for one organization); educational institutions, 5.8 (83); foreign 7.2 (44); individuals 2.3 (48).

Discharges to Users in a 3 Month Period in 1962
Number of Organizations/Individuals and the Frequency of Filled Requests

Material	User Groups				Total
	Individuals	Private Business 1/	Educational Institutions	Foreign	
Loans circulated:					
Number of Users	160	65	59	8	292
Requests filled, pieces	607	420	543	26	1596
Interlibrary Loan:					
Number of Users	-	37	62	7	106
Requests filled, pieces	-	117	140	17	274
Copy--Microfilm and Photo:					
Number of Users	392	59	21	45	517
Requests filled, pieces	681	542	138	388	1749
Total Material:					
Number of Users	552	161	142	60	915
Requests filled, pieces	1288	1079	821	431	3619
Average per user	2.3	6.7	5.8	7.2	4.0
Highest number of Requests from one user	48	91	83	44	

1/ Private Organizations, Businesses, and local governments.

AGE OF MATERIAL DISCHARGED

General:

Material discharged in the 3 month period was sorted according to date of publication. Table D 5 shows the number of pieces discharged that were published in 5 year period through 1957 and annually from 1958 to mid June, by user groups. To analyze this in terms of age of material the number of pieces are cumulated so that for any year shown the number represents the pieces published in that year or earlier. These data are presented in Table D 6. Also included in the table are the numbers expressed as percent of total pieces for the user groups: (1) Department of Agriculture (2) Other than the Department of Agriculture and (3) All Users. Fig. D 7 shows these percentages which are described as age of material for the 3 groups. It should be noted that about a half a year is included in the 1962 statistics. June is shown as the cut off publication date for 1962 since most of the material included in the study was discharged in the period May 1 to July 31, 1962.

All Users:

Use of material declines with age. Or, stated in another way, as material increases in age, the frequency of requests diminishes. The question is, what is the rate of decline? The Fig. D 7 shows this pattern of decline.

Requests diminish rapidly for material published during the most recent five years. Requests filled for publications dated 1961 through mid-1962 represented 28 percent of the total requests filled during the 3 month survey period. This dropped to 10 percent for 1960 material, 7 percent for 1959 material, and 4 percent for 1958 material. Thus half of the material withdrawn from the library in the 3 months studied, was published since 1957. The rate of decline of requests for material published in 1957 or earlier is much slower. The frequency of request for material published in the 5-year periods dropped to average about 3 percent a year, then to 2 percent a year, 1 percent

a year for each the next 2 periods, and then to less than 1 percent for the 5-year periods from 1937 back to 1907.

Stated in another way:

90 percent of the material withdrawn was published in	
	1961 or earlier
72 percent	1960 or earlier
62 percent	1959 or earlier
55 percent	1958 or earlier
51 percent	1957 or earlier
35 percent	1952 or earlier
24 percent	1947 or earlier
20 percent	1942 or earlier
15 percent	1937 or earlier

USDA Users:

The Department of Agriculture users accounted for 68 percent of the total material withdrawn from the Library in the 3 month period analyzed. Department users make more of a demand on current publications than do other NAL users. Material published in the period 1958 through mid 1962 represented 54 percent of the total withdrawn by Department users but only 40 percent withdrawn by other users. This relationship in the rate of material discharged, held for each year in the 1958-62 period although each of the user group rates decreased rapidly with the increased age of material. Conversely the demand for material published in 1957 or earlier is greater for users from outside of the Department. NonUSDA users probably have access to current literature in their own location but draw on the NAL collection as a back up source for older material. See Fig. D 7.

Material Discharged to Users in 3 month period
 Pieces published in specified periods by user groups

Material includes Loans, rapid copy and photocopy

Pieces Published within Periods Shown	Pieces by User groups				Percent of total All Users
	U.S. Govt.		Other Users	All Users	
	Dept. of Agri.	Other U.S. Govt.			
1962 (Part of year)	1049	174	299	1522	8
61	3163	453	446	4062	20
60	1562	273	265	2100	10
59	882	185	185	1252	7
58	653	123	157	933	4
1953-57	2112	499	592	3203	16
1948-52	1320	348	359	2027	11
1943-47	588	148	169	905	4
1938-42	634	150	175	959	5
1933-37	408	122	200	730	3
1928-32	306	98	145	549	3
1923-27	180	70	101	351	2
1918-22	128	43	43	214	1
1913-1917	112	36	58	206	1
1908-1912	99	33	52	184	1
1907 or earlier	414	96	300	810	4
Total pieces with date	13,610	2,851	3,546	20,007	100
Date not shown	650	173	158	981	
Total pieces dis- charged	14,260	3,024	3,704	20,988	

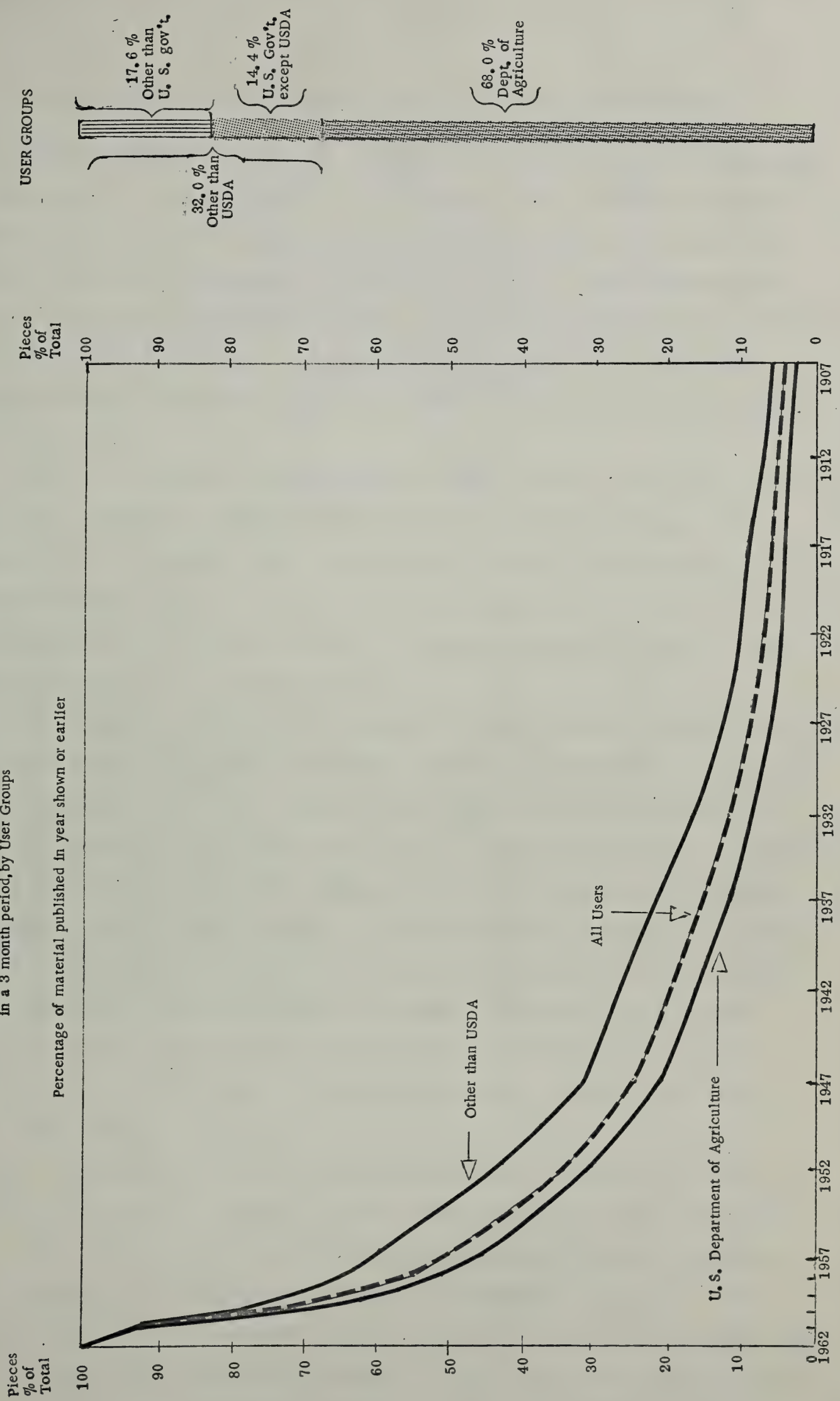
Material Discharged to Users in 3 month period
Pieces published in year shown or earlier
Cumulative totals

Material includes Loans, Rapid copy, and photocopy

Published in year shown or earlier (Cumulative)	Pieces by User Groups					Percent of Total		
	U. S. Government		Other than U. S. Government (3)	Other than Dept. of Agriculture (2+3)	All Users (1+2+3)	Dept. of Agriculture	Other than Dept. of Agriculture	All Users
	Dept. of Agriculture (1)	Other U. S. Government (2)						
1/2June 1962	13,610	2,851	3,546	6,397	20,007	100.0	100.0	100.0
1961	12,561	2,677	3,247	5,924	18,485	92.3	92.6	92.4
1960	9,398	2,224	2,801	5,025	14,423	69.1	78.6	72.1
1959	7,836	1,951	2,536	4,487	12,323	57.6	70.1	61.6
1958	6,954	1,766	2,351	4,117	11,071	51.1	64.4	55.3
1957	6,301	1,643	2,194	3,837	10,138	46.3	60.0	50.7
1952	4,189	1,144	1,602	2,746	6,935	30.8	42.9	34.7
1947	2,869	796	1,243	2,039	4,908	21.1	31.9	24.5
1942	2,281	648	1,074	1,722	4,003	16.8	26.9	20.0
1937	1,647	498	899	1,397	3,044	12.1	21.8	15.2
1932	1,239	376	699	1,075	2,314	9.1	16.8	11.6
1927	933	278	554	832	1,765	6.9	13.0	8.8
1922	753	208	453	661	1,414	5.5	10.3	7.1
1917	625	165	410	575	1,200	4.6	9.0	6.0
1912	513	129	352	481	994	3.8	7.5	5.0
1907	414	96	300	396	810	3.0	6.2	4.0

1/ June estimated as most recent publication date, since survey related to material circulated in the period May 1 to July 31, 1962.

AGE OF MATERIAL DISCHARGED IN NATIONAL AGRICULTURAL LIBRARY
in a 3 month period, by User Groups



CLASSIFICATION AND FREQUENCY OF USE OF MATERIAL DISCHARGED

Request Forms (AD 245) for all material loaned through circulation to users in the 3 month period in 1962 were sorted according to Call Number. In this period there were 6,626 titles requested a total of 13,068 times which averages 2 requests per title. The frequency of requests for each title was recorded. A title may represent more than one piece since a journal title will have one call number regardless of the publication frequency, that is it may be a weekly, monthly, annual, or a separate.

Table D 8 shows 40 classification groups and the number of titles and total requests by classification groups. Table D 9 shows a frequency table of requests which ranges from 1 to 58 requests for the 40 classification groups. This is followed by a frequency list of the 151 titles requested 10 or more times, and an alphabetical listing of the 496 titles requested 5 or more times.

Analyzing the frequency of requests in large classification groups, the group with the highest frequency average was scientific periodicals (call numbers 470 to 475) in which there were 73 titles requested 401 times to average 5.49 requests per title. In this group were 5 journals with a high request frequency: Nature, 58 times; Science, 42; National Geographic, 28; Current Science, 25; and Scientific American, 24 times.

Agricultural College and Experiment Stations (call numbers 100 to 109) showed 179 titles requested 553 times, an average of 3.09 per title but none requested more than 20 times. Medicine and Hygiene (call numbers 448-449) also had a high frequency average but no one title rated high.

In the Learned Societies classification (call numbers 500-517), the group ranking 3rd in high request frequency, there were two titles each requested 25 times, namely Comptes Rendus Des Travaux Du Laboratoire Carisberg and Annals of the New York Academy of Science. The Chemistry group (call numbers 381-396) had an average frequency rate of 2.62 per piece but this group included 5 titles that rated high. These were the Journal of Biological Chemistry, requested 46 times; Biochemical Journal, 43; Journal of American Chemical Society, 31; Journal of Nutrition, 24; and Analytical Chemistry, 20 times.

National Agricultural Library
Discharges to Users in a 3 Month Period in 1962

Number of Titles and Total Requests by Classification Group

<u>Call No.</u>	<u>Classification</u>	<u>Titles No.</u>	<u>Requests No.</u>
AGRICULTURE			
1-1.9	USDA	216	545
2-29	Agriculture Boards, Societies, Congresses Foreign Countries	351	657
30-38	General and Geographic Arrangement	67	100
40-50	Animal Husbandry	407	752
53-56	The Soil	115	177
57	Fertilizer and Soil Amendments		
58	Agriculture Implements, Machinery and Processes		
59-79	Crops	231	327
HORTICULTURE AND LANDSCAPE ART			
80-90	Horticultural Periodicals and General	283	425
91	Vegetables		
93-95	Pomology and Nuts		
96	Floriculture; flowers and ornamental plants and their culture		
97-98	Gardens and ornamental planting, Landscape art, parks, etc.		
FORESTRY			
99	Forestry	189	305
100-109	AGRICULTURAL COLLEGES AND EXPERIMENT STATIONS	179	553
110-145	GENERAL LITERATURE	110	143
148-195	UNITED STATES PUBLIC DOCUMENTS	183	283
200-239	REFERENCE BOOKS	138	205
240-243	BIBLIOGRAPHY, LIBRARY SCIENCE AND DOCUMENTATION	105	183
ECONOMIC SCIENCES			
249	Industrial and Office Management	56	94
250-273	Statistics	277	525
274	Law omitted	-	-
275-276	Education	102	142
ECONOMICS			
277-279	Economic History, Geography, and Conservation of natural resources	54	70
280	Economics; sociology in general subdivided geographically and Cooperation, subdivided by commodities.....	403	702
281-287	Agricultural economics	386	570
288-314	TECHNOLOGY	296	496
317-324	HOME ECONOMICS	13	52
MATHEMATICS- PHYSICAL SCIENCES			
325	Mathematics	64	85
330-346	Physical sciences	125	239
381-396	Chemistry	546	1432
398-408	Geology and mineralogy	19	37

Number of Titles and Total Requests by Classification Group (Continued)

<u>Call No.</u>	<u>Classification</u>	<u>Titles No.</u>	<u>Requests No.</u>
BIOLOGICAL SCIENCES			
409-410	Natural history	141	337
411-415	Zoology	81	108
420-432	Entomology	237	470
433-447	Misc. orders of animals	317	798
448-449	Medicine and hygiene	134	368
450-464	Botany	553	1039
SCIENTIFIC PERIODICALS AND SOCIETIES			
470-475	Scientific periodicals	73	401
500-517	Learned societies	175	487
Total		6,626	13,068
Av. Requests per title			2.0

NAL Discharges to Users in 3 month period and 1962
Frequency of Requests for Titles by Classification Groups

Frequency of Requests		Number of Titles by Classification Groups										
		Total	1.0- 1.9	2.0- 29	30- 38	40- 50	53- 58	59- 79	80- 98	99	100- 109-	110 145-
1	.....	4,563	160	218	56	291	88	183	221	139	75	93
2	.....	953	21	67	5	59	13	25	35	23	45	11
3	.....	380	8	25	2	17	7	12	12	12	10	5
4	.....	234	6	18	1	10	2	8	6	4	7	-
5	.....	118	2	8	-	6	3	-	-	7	10	-
6	.....	86	4	6	1	8	-	-	5	1	8	-
7	.....	64	-	1	-	7	-	1	1	1	7	-
8	.....	42	-	3	-	2	-	1	-	-	1	-
9	.....	35	-	3	2	1	1	-	-	1	4	-
10	.....	31	1	-	-	-	1	-	2	-	5	-
11	.....	28	3	-	-	-	-	1	-	1	3	-
12	.....	17	-	2	-	1	-	-	-	-	1	-
13	.....	11	1	-	-	1	-	-	-	-	2	1
14	.....	5	-	-	-	-	-	-	-	-	-	-
15	.....	9	-	-	-	-	-	-	-	-	-	-
16	.....	6	-	-	-	2	-	-	-	-	-	-
17	.....	7	2	-	-	-	-	-	1	-	-	-
18	.....	3	1	-	-	-	-	-	-	-	1	-
19	.....	8	2	-	-	1	-	-	-	-	-	-
20	.....	3	1	-	-	-	-	-	-	-	-	-
21	.....	1	1	-	-	-	-	-	-	-	-	-
22	.....	1	-	-	-	-	-	-	-	-	-	-
23	.....	3	1	-	-	-	-	-	-	-	1	-
24	.....	2	-	-	-	1	-	-	-	-	-	-
25	.....	3	1	-	-	-	-	-	-	-	-	-
26	.....	1	1	-	-	-	-	-	-	-	-	-
27	.....	2	-	-	-	-	-	-	-	-	-	-
28	.....	1	-	-	-	-	-	-	-	-	-	-
30	.....	2	-	-	-	-	-	-	-	-	-	-
31	.....	2	-	-	-	-	-	-	-	-	-	-
42	.....	1	-	-	-	-	-	-	-	-	-	-
43	.....	1	-	-	-	-	-	-	-	-	-	-
46	.....	1	-	-	-	-	-	-	-	-	-	-
54	.....	1	-	-	-	-	-	-	-	-	-	-
58	.....	1	-	-	-	-	-	-	-	-	-	-
Titles		6,626	216	351	67	407	115	231	283	189	179	110
Requests		13,068	545	657	100	752	177	327	425	305	553	143

NAL Discharges to Users (Continued)

Frequency of Requests	148- 195	240- 239	240- 243	249	250- 273	275- 276	277- 279	280	281- 287	288- 314	317- 324
1	141	100	80	42	171	84	45	313	309	214	7
2	21	23	10	7	54	10	6	51	34	49	2
3	8	7	8	2	22	2	1	16	16	12	1
4	5	4	2	1	13	3	1	4	13	7	-
5	2	3	-	1	4	-	-	5	8	4	-
6	4	-	-	-	2	1	1	4	1	3	-
7	1	1	2	2	4	2	-	2	-	2	1
8	-	-	-	-	2	-	-	2	3	1	-
9	-	-	1	1	1	-	-	-	1	1	-
10	-	-	1	-	2	-	-	1	-	1	-
11	-	-	-	-	1	-	-	-	-	-	-
12	-	-	-	-	1	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	1
14	-	-	-	-	-	-	-	-	1	1	-
15	1	-	-	-	-	-	-	1	-	-	-
16	-	-	-	-	-	-	-	1	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-
19	-	-	1	-	-	-	-	1	-	-	1
20	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	1	-
28	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	1	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	1	-	-	-
58	-	-	-	-	-	-	-	-	-	-	-
Titles	183	138	105	56	277	102	54	403	386	296	13
Requests	283	205	183	94	525	142	70	702	570	496	52

NAL Discharges to Users (Continued)

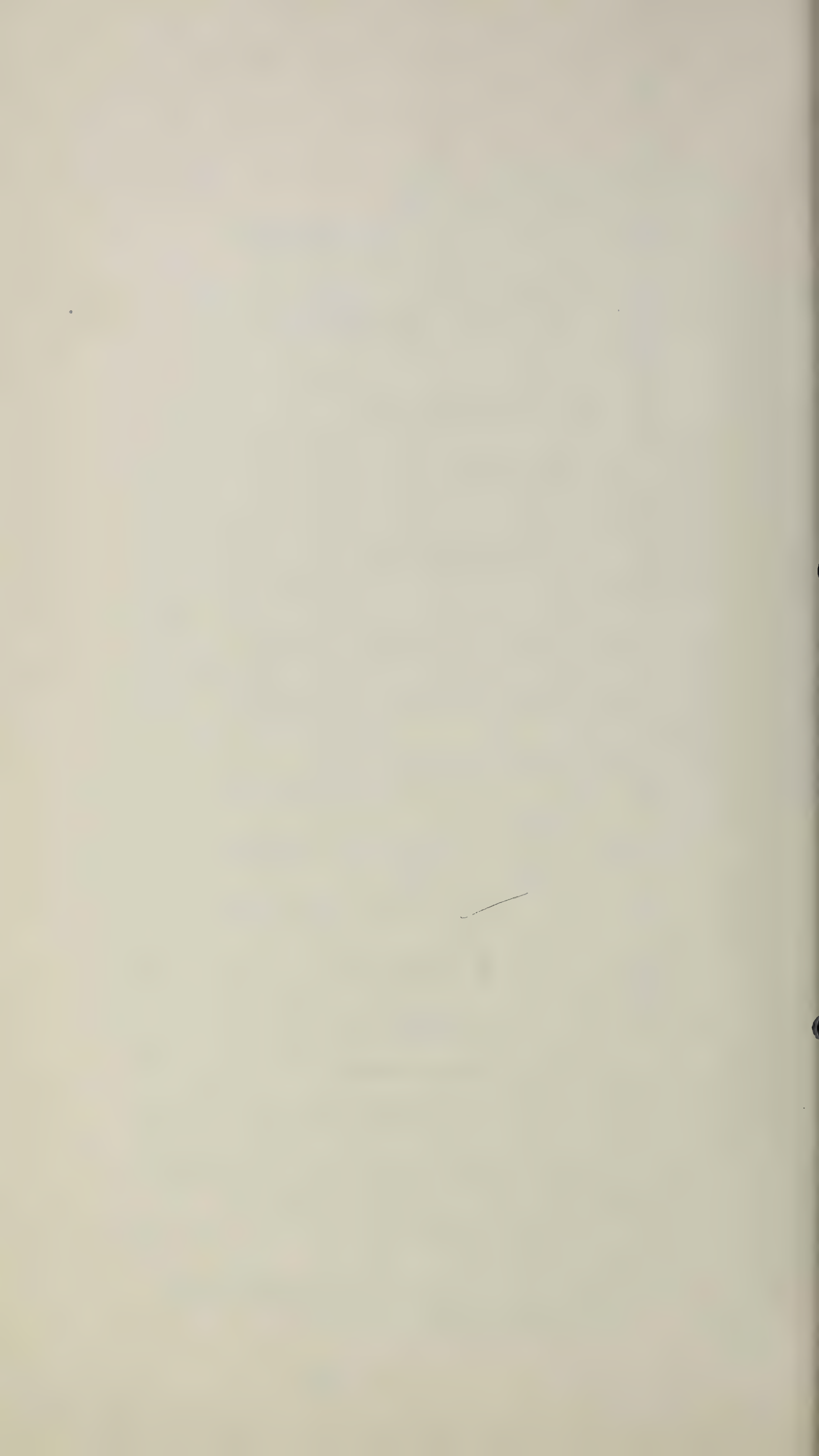
Frequency of Requests	325	330- 346	381- 396	398- 408	409- 410	411- 465	420- 432	433- 447	448- 449	450- 464	470- 475	500- 517
1	54	93	323	14	83	63	161	182	63	388	28	81
2	9	13	84	2	19	13	29	60	30	74	16	33
3		3	45	1	12	3	17	23	8	32	5	26
4		1	32	-	11	1	10	16	11	25	1	11
5		4	9	1	4	-	6	5	5	14	2	5
6		5	12	-	-	1	4	2	2	4	3	4
7		1	5	-	2	-	2	6	5	-	3	5
8		2	5	-	3	-	1	5	4	2	4	1
9		1	2	-	1	-	3	1	-	6	2	2
10		-	5	-	4	-	2	3	1	1	-	1
11		1	6	1	-	-	-	4	2	2	2	1
12		-	3	-	1	-	-	4	2	-	2	-
13		-	1	-	-	-	-	1	-	-	-	-
14	1	1	1	-	-	-	-	1	-	-	-	3
15		1	5	-	-	-	-	2	-	-	-	-
16		1	2	-	-	-	-	-	-	1	-	-
17		-	-	-	1	-	-	1	1	1	-	-
18		-	-	-	-	-	1	-	-	-	-	-
19		-	1	-	-	-	1	-	-	-	-	-
20		-	1	-	-	-	-	-	-	1	-	-
21		-	-	-	-	-	-	-	-	-	-	-
22		-	-	-	-	-	-	1	-	-	-	-
23		-	1	-	-	-	-	-	-	-	-	1
24		-	-	-	-	-	-	-	-	-	1	-
25		-	-	-	-	-	-	-	-	-	1	1
26		-	-	-	-	-	-	-	-	-	-	-
27		-	-	-	-	-	-	-	-	1	-	-
28		-	-	-	-	-	-	-	-	-	1	-
30		-	-	-	-	-	-	1	-	-	-	-
31		1	1	-	-	-	-	-	-	1	-	-
42		-	-	-	-	-	-	-	-	-	1	-
43		1	1	-	-	-	-	-	-	-	-	-
46		1	1	-	-	-	-	-	-	-	-	-
54		-	-	-	-	-	-	-	-	-	-	-
58		-	-	-	-	-	-	-	-	-	-	-
Titles		64	125	546	19	141	81	237	317	553	73	175
Requests		85	239	1432	37	337	108	470	798	1039	401	487

FREQUENCY LIST OF TITLES REQUESTED TEN TIMES OR MORE

<u>CALL NUMBER</u>	<u>TITLE</u>	<u>NO. REQUESTS</u>
472		58
N21	Nature	
280.8		54
J822	Journal of Farm Economics	
381		46
J824	Journal of Biological Chemistry	
382		43
B52	Biochemical Journal	
470		42
Sci2	Science	
450		31
Am36	American Journal of Botany	
381		31
Am33J	Journal of the American Chemical Society	
280.8		30
Am32	American Economic Review	
447.8		30
J82	Journal of Physiology	
470		28
N213	National Geographic Magazine	
307.8		27
J82	American Oil Chemists Society, Journal	
450		27
P692	Plant Physiology	
1		26
Ag84Y	U.S. Dept. of Agriculture. Yearbook	
505		25
P21	Comptes Rendus Des Travaux Du Laboratoire Carisberg	
475		25
Sci23	Current Science	
1		25
Ag84M	U.S. Dept. of Agriculture. Miscellaneous publication.	
44.8		24
J822	Journal of Dairy Science	
389.8		24
J82	Journal of Nutrition	
470		24
Sci25	Scientific American	
500		23
N484	Annals of the New York Academy of Science	
1		23
Ag84Te	U.S. Dept. of Agriculture. Technical bulletin.	
442.8		22
Au7	Australian Journal of Biological Sciences	
381		20
J825A	Analytical Chemistry	

450			20
B652	Botanical Gazette.	Chicago, Ill.	
1			20
Ag84J	U.S. Dept. of Agriculture.		
	Journal of Agricultural Research.		
381			
B522	Biochimica et Biophysica Acta		19
421			19
C16	Canadian Entomologist		
241			
C734A	Commonwealth Bureau of Soil Science		19
321.8			19
C762	Consumer Reports		
280.8			19
Ec78	Econometrica		
100			19
Io92	Iowa Agricultural Experiment Station,		
	Research Bulletin		
47.8			19
Am33P	Poultry Science		
1			19
Ag84F	U.S. Dept. of Agriculture.		
	Farmers bulletin.		
421			18
J822	Journal of Economic Entomology		
1			18
Ag84Mr	U.S. Dept. of Agriculture.		
	Marketing Research Report.		
81			17
So12	American Society of Horticultural		
	Science Proceedings		
450			17
C94	Curtis's Botanical Magazine.	London, Eng.	
448.3			17
J82	Journal of Bacteriology		
410.9			17
L84P	London, England. Zoological Society,		
	Proceedings		
1			17
Ag84C	U.S. Dept. of Agriculture.		
	Circular		
Note: Ceased publication 1958.			
1			17
So32F	U.S. Soil Conservation Service.		
1955	Soil Survey Reports. Series 1955.		
381			16
Ar2	Archives of Biochemistry and Biophysics		
450			16
B6527	Botanical Review.	New York, N.Y.	
442.9			16
C14	Cambridge [England] Philosophical		
	Society, Biological Reviews		
280.8			16
H262	Harvard Business Review		
381			16
J8223	Journal of Agricultural and Food		
	Chemistry		
44.8			16
J823	Journal of Dairy Research		
41.8			16
V641	Veterinary Record		

385			15
Ac82	Acta Chemica Scandinavica		15
389.8			15
J824	American Journal of Clinical Nutrition		15
382			15
M31C	Chemistry and Industry		15
442.9			15
P21	Comptes Soc. Biol.		15
389.8			15
F737	Food Engineering		15
280.8			15
Q2	Quarterly Journal of Economics		15
157.7			15
C76Ds	Survey of Current Business		14
442.8			14
B523	Biologisches Zentralblatt		14
442.8			14
B522	Biometrika		14
385			14
H36	Helvetica Chemica Acta		14
100			14
In2P	Indiana Agricultural Experiment Station, Bulletin		14
286.8			14
N488	New York Times		14
334.8			14
Sp3	Spectrochimica Acta		14
302.8			14
T162	TAPPI		13
41.8			13
Au72	Australian Veterinary Journal		13
100			13
Cl2S	California Agricultural Experiment Station		13
100			13
Cl2Cag	California Agriculture		13
500			13
EL4	Elisha Mitchell Scientific Society, Journal		13
396.8			13
J82	Journal of Pharmacology and Experi- mental Therapeutics		13
514			13
Sy2	Linnean Society of New South Wales. Proceedings		13
325			13
E23	Methods of Correlation		13
500			13
N21P	National Academy of Science, Proceedings		13
1.9			13
P69P	Plant Disease Reporter		12
470			12
Am36	American Naturalist Herpetology		12
251			12
Am3	American Statistical Association Journal		12
321.8			12
C76	Consumers Research Bulletin		12
2.2	Indian Farming		12
In283			12
41.8			12
Am3	Journal of American Veterinary Medical Association		12



448.39		12
Sol2	Journal of Applied Bacteriology	12
381		
As7	Journal of Associated Official Agricultural Chemists	
99.8		12
F768	Journal of Forestry	
448.3		12
J823	Journal of General Microbiology	12
444.8		
J826	Journal of Morphology	
381		12
J822	Journal of Physical Chemistry	
100		12
M58S	Michigan Agricultural Experiment Station, Bulletin	
25	Philippine Agriculturist	12
P542		
440.8		12
Q2	Quarterly Journal of Microscopical Science	
474		12
Z3	Zeitschrift für Naturforschung	12
444.8		
Z3	Zeitschrift für Vergleichende Physiologie Jr.	
410		12
R92	Zoologicheskii Zhurnal, U.S.S.R.	
381		11
An1	Analytica Chimica Acta	
450		11
An7	Annals of Botany	
251.8		11
An7	Annals of Mathematical Statistics	11
442.8		
Ar26	Archiv für Mikrobiologie; Zeitschrift für die Enforschung der Pflanzlichen Mikroorganismen, Jr.	
1.916		11
B471	Bibliography of Agriculture	
442.8		11
B52	Biological Bulletin	
448.8		11
B77	British Medical Journal	
511		11
P444A	Doklady Akademiia Nauk SSSR Seriia Biologicheskaiia	
475		11
Ex7	Experientia	
442.8		11
G28	Genetics	
381		11
J825	Industrial and Engineering Chemistry	
443		11
F18	Introduction to Quantitative Genetics	
261		11
Is7S	Italy Statistics	
385		11
J822	Journal of Biochemistry - Tokyo, Japan	
403		11
J82	Journal of Geology	
382		11
L84J	Journal of the Chemical Society	

100		11
K13S	Kansas Agricultural Experiment Station, Bulletin	11
100		
K41	Kentucky Agricultural Experiment Station, Bulletin	11
100		
L93	Louisiana Agricultural Experiment Station, Annual Report, Circular, Bulletin	11
474		11
N213	Naturwissenschaften	11
100		
813	North Dakota Agricultural Experiment Station, Bulletin	11
396.9		11
P49	Pharmaceutical Society of Japan, Journal	11
464.8		11
P56	Phytopathology	11
398.8		11
Q4	Quick Frozen Foods	11
382		
F22	Transactions of the Faraday Soccity	11
1		
Ag84Ab	U.S. Dept. of Agriculture. Agriculture information bulletin.	11
1		
Ag84B	U.S. Dept. of Agriculture. Bulletin.	11
442.8		11
Uz1	Uzbekskii biologicheskii zhurnal.	11
79.8		11
W41	Weeds	11
410		11
Z751S	Zoologische Jahrbucher, an. Jena, Germany Abteilung für Systematik Okologie und Geographie der Tiere	10
507		
R66	Accademia Nazionale dei Lincei	10
448.9		10
Am37	American Medical Association, Journal	10
410		10
M58	American Midland Naturalist	10
396.9		
Am33J	American Pharmaceutical Association, Journal, Scientific Edition	10
280.8		10
Am37	American Sociological Review	10
421		10
An72	Annual Review of Entomology	10
442.8		
B5224	Biometrics	10
100		
C76St	Connecticut Agricultural Experiment Station, Bulletin	10
451		
D48	Deutsche Botanische Gesellschaft Berichte. Stuttgart, Germany	10
384		10
Z33	Die Chemie	10
410		10
Ec7	Ecology	

81		10
F66	Florida State Horticultural Society Proceedings	10
100		
Cl2H	Hilgardia	10
442.8		
B77	Journal of Experimental Biology	10
381		
J829	Journal of Polymer Science	10
100		
M693	Missouri Agricultural Experiment Station, Research Bulletin	
269.5		10
St2M	Monthly Statistics of the Foreign Trade	
100		10
Oh3S	Ohio Agricultural Experiment Station, Bulletin	10
80		
Pl16	Pacific Coast Nurseryman	
449.8		10
Ex8	Pest Control	10
241.7		
R25	Referaty Zhurnal Biology	
295.9		10
Am32J	Refrigeration Engineering	
420		10
B41	Societe Entomologique de Belgique, Bulletin	10
56.9		
So3	Soil Science Society of America Proceedings	10
100		
So82	South Dakota Agricultural Experiment Station, Bulletin	10
100		
T31M	Texas Agricultural Experiment Station, Miscellaneous Publication	10
1		
Ag84St	U.S. Dept. of Agriculture. Statistical bulletin.	
384		10
Z3	Zeitschrift für Analytische Chemie	
384		10
Z38	Zeitschrift für Physiologische Chemie	

TOTAL TITLES 147

TOTAL REQUESTS 2,294

ALPHABETICAL LIST OF TITLES REQUESTED FIVE TIMES OR MORE

<u>CALL NUMBER</u>	<u>TITLE</u>	<u>NO. REQUESTS</u>
507 R66	Accademia Nazionale dei Lincei	10
256.03 Ao2	Accounts Relating to Trade and Navigation of the United Kingdom	7
385 Ac82	Acta Chemica Scandinavica	15
421 K96	Acta Entomologica Simica	5
448.3 Ac8	Acta Pathologica et Microbiologica Scandinavica	8
475 Ac8	Acta Tropica	5
30 Ad9	Advances in Agronomy	9
381 Ad93	Advances in Chemistry	8
280.19 M94	Africa, Its People and their Cultural History	6
30.98 A98	Agricultural History	9
30.98 A782	Agricultural History Review	6
281.9 AL15	Agricultural Production, Alaska	5
8 T73	Agricultural Society of Trinidad and Tobago.	8
510 V67	Akademie der Wissenschaften Wien. Abt. I Mathematische Naturwissenschaftliche Klasse.	5
410.9 AL62	Akademiia nauk Kazkhskoi SSR, Institut Zoologii, Trudy, Jr.	5
100 ALIS	Alabama Agricultural Experiment Station	5

500		6
Am33	American Academy of Arts and Sciences	
97.31		7
Am32	American Camellia Yearbook	
		5
280.2		
V892A	American Cooperatives	8
389.8		
Am34	American Dietetic Association, Journal	9
306.8		
Am3	American Dyestuff Reporter	
280.8		30
Am32	American Economic Review	
99.8		7
F762	American Forests	5
447.8		
Am32	American Journal of Anatomy	
450		31
Am36	American Journal of Botany	
389.8		15
J824	American Journal of Clinical Nutrition	5
448.8		
Am34	American Journal of Clinical Pathology	
448.8		6
Am39	American Journal of Pathology	
447.8		8
Am3	American Journal of Physiology	
449.9		8
Am3J	American Journal of Public Health	
470		8
Am34	American Journal of Science. New Haven, Conn.	7
41.8		
Am3A	American Journal of Veterinary Research	
48.9		7
Am3	American Kennel Club Stud Book Register	
448.9		10
Am37	American Medical Association, Journal	
410		10
M58	American Midland Naturalist	7
44.8		
Am38	American Milk Review	

470		12
Am36	American Naturalist Herpetology	
307.8		27
J82	American Oil Chemists Society, Journal	
		10
396.9		
Am33J	American Pharmaceutical Association, Journal. Scientific Edition	
81		17
So12	American Society of Horticultural Science Proceedings	
280.8		10
Am37	American Sociological Review	
		12
251		
Am3	American Statistical Association Journal	
292.9		6
Am32J	American Waterworks Association, Journal	
		6
503		
Am82	Amsterdam, Netherlands, Instituut voor de Tropen. Afdeling tropische producten. [Mededeling)	
		11
381		
An1	Analytica Chimica Acta	
381		20
J825A	Analytical Chemistry	
447.8		8
An1	Anatomical Record	
436.8		6
An7	Annales de Parasitologie Humaine et Comparee	
410		7
An7	Annales des Sciences Naturelles. Zoologie et Biologie Animale, Jr.	
		5
385		
An7	Annali di Chimica	
442.8		9
An7	Annals of Applied Biology	
		11
450		
An7	Annals of Botany	
251.8		11
An7	Annals of Mathematical Statistics	
500		23
N484	Annals of the New York Academy of Science	
464.9		5
P562	Annals of the Phytopathological Society of Japan	

448.9		7
L75A	Annals of Tropical Medicine and Parasitology	
421		10
An72	Annual Review of Entomology	
204		5
C99	Appletons Spanish-English Dictionary	
		5
251		
C882A	Applied General Statistics	
334.8		5
P563	Applied Physics	
448.8		7
Ar23	Archiv fuer per Pathalogische Anatomie	
		11
442.8		
Ar26	Archiv für Mikrobiologie; Zeitschrift für die Enforschung der Pflanzlichen Mikroorganismen, Jr.	
410		8
Ar2	Archiv fur Naturgeschichte	
		8
439.8		
Ar2	Archiv für Protistenkunde, Jr.	
		16
381		
Ar2	Archives of Biochemistry and Biophysics	
		7
100		
Ar4	Arizona Agricultural Experiment Station	
		5
100		
Ar4M	Arizona Agricultural Experiment Station Progress Report	
		6
100		
Ar4eF	Arkansas Farm Research	
290.9		6
Am3Ps	A.S.C.E. Proceedings	
23	Australian Journal of Agricultural Research	9
Au783		
442.8		22
Au7	Australian Journal of Biological Sciences	
41.8		13
Au72	Australian Veterinary Journal	
284.8		6
B27	Barron's	
56		5
B38E	Bear, Firman E	
574	Earth, The Stuff of Life	
1.916		11
B471	Bibliography of Agriculture	

382		43
B52	Biochemical Journal	
		19
381		
B522	Biochimica et Biophysica Acta	
442.8		11
B52	Biological Bulletin	
		14
442.8		
B523	Biologisches Zentralblatt	
		10
442.8		
B5224	Biometrics	
		14
442.8		
B522	Biometrika	
442.8		7
B5294Ae	BioPhysics	
		5
255.9		
Es82B	Boletin de Comercio Exterior	
		20
450		
B652	Botanical Gazette. Chicago, Ill.	
		6
450		
B651	Botanical Magazine. Tokyo, Japan	
		16
450		
B6527	Botanical Review. New York, N.Y.	
		5
450		
En3B	Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzen- geographie. Leipzig, Germany	
		9
451		
B69	Boyce Thompson Institute for Plant Research, Yonkers, N.Y., Contributions	
410		5
B77	British Journal of Animal Behavior	
448.8		11
B77	British Medical Journal	
41.8		
V643	British Vet Journal	9
47.8		5
B782	Broiler Growing	
		5
512		
So2	Bulgarska akademiia na naukite, Sofia. Doklady.	
24		
K83	Bulletin Agricole du Congo Belge	5

22.5	Bulletin Economique de l'Indoctrine	5
In2		
255.9		8
Es8B	Bulletin Henseul de Estadistica	
421		9
B87	Bulletin of Entomological Research	
280.8		8
Sy8	Business Week	
100		13
Cl2S	California Agricultural Experiment Station	
100		13
Cl2Cag	California Agriculture	
442.9		16
Cl4	Cambridge [England] Philosophical Society, Biological Reviews	
421		19
Cl6	Canadian Entomologist	
470		9
Cl6E	Canadian Journal of Biochemistry and Physiology	
470		8
Cl6C	Canadian Journal of Botany	
41.8		6
Cl62	Canadian Journal of Comparative Medical and Veterinary Science	
448.8		7
Cl62	Canadian Journal of Microbiology	
470		6
Cl6D	Canadian Journal of Zoology	
464.9		5
Cl6S	Canadian Plant Disease Survey	
49.9		6
Ea72	Canadian Society of Animal Production	
286.83		8
Cl6	Canner and Freezer	
284.29		5
Sy6	Capital and Credit Needs in a Changing Agriculture	
276		7
M36C	Catalog	
49		6
C29	Cattleman	
157.41		5
C33882	Census of Manufacturers	

59.8			7
C33	Cereal Chemistry		
381			7
EL2	Chemical Engineering		
381			6
J825N	Chemical Engineering News		
381			7
C425	Chemical Reviews		
381			5
C426	Chemical Week		
			8
384			
B45	Chemische Berichte		
381			6
C424	Chemist Analyst		
382			15
M31C	Chemistry and Industry		
381			5
N213Na	Chemurgic Digest		
			5
385			
C444	Chimia		
80			6
C498	Citrus Magazine		
			8
286.9			
Un34S	Commodity Trade Statistics		
			19
241			
C734A	Commonwealth Bureau of Soil Science		
			6
390.9			
C19	Comptes Rendus des Travaux du laboratoire		
			25
505			
P21	Comptes Rendus Des Travaux Du Laboratoire Carisberg		
			15
442.9			
P21	Comptes Soc. Biol.		
			10
100			
C76St	Connecticut Agricultural Experiment Station, Bulletin		
321.8			19
C762	Consumer Reports		
			12
321.8			
C76	Consumers Research Bulletin		
			7
100			
N48C	Cornell University, Agricultural Experiment Station, Bulletin		

475 Sci23	Current Science	25
450 C94	Curtis's Botanical Magazine. London, Eng.	17
225 D142	Dairy Credit Book	5
44.8 D1426	Dairy Engineering	7
241 Im76	Dairy Science Abstract	7
251 Un356	Demographic Yearbook	5
451 D48	Deutsche Botanische Gesellschaft Berichte. Stuttgart, Germany	10
41.8 D482	Deutsche tierärztliche Wochenschrift.	5
384 Z33	Die Chemie	10
241.8 M58	Dissertation Abstracts	9
511 Er4D	Dokladi Akademiia Nauk. Armienianskoi SSR	8
511 P444A	Doklady Akademiia Nauk SSSR Seriia Biologicheskaiia	11
24 Ea74	East African Agricultural Journal	6
410 Ec7	Ecology	10
280.8 Ec78	Econometrica	19
450 Ec7	Economic Botany	5
280.8 Ec7226	Economic Development and Cultural Change	6
280.8 Ec72	Economic Journal	7
335.8 EL2	Electrical World	5

381		6
EL22J	Electrochemical Society	
500		13
EL4	Elisha Mitchell Scientific Society, Journal	
		6
99.8		
Em72	Empire Forestry Review	
IO	Empire Journal of Experimental Agric.	6
Em7		
		6
158.6		
B87	Employment and Earnings Statistics	
220		7
En1	Encyclopedia Britannica	
421		8
Em88	Entomological News	
		9
420		
En82	Entomological Society of America, Annals	
		7
420		
En86	Entomological Society of Southern Africa Journal, Pretoria, South Africa	
475		11
Ex7	Experientia	
		9
442.8		
Ex7	Experimental Cell Research	
100		7
So82S	Farm and Home Research	
		5
6		
F2212	Farm Journal	
6	Farm Quarterly	8
F22995		
24	Farming in South Africa	7
So842		
		6
1.9		
Ec752F	Fats and Oils Situation	
442.9		7
F31P	Federation of American Societies for Experimental Biology, Federation Proceedings	
		8
286.81		
F322	Feedstuffs	
		6
384		
C422	Fette, Seifen, Anstrichmittel	

450			8
F66	Flora		
100			5
F66S	Florida Agricultural Experiment Station, Bulletin		
81			10
F66	Florida State Horticultural Society Proceedings		
			15
389.8			
F737	Food Engineering		
			6
389.8			
F7389	Food Technology		
			5
99.8			
F7692	Forest Farmer		
			5
99.8			
F7632	Forest Science		
			5
99.8			
F7623	Forestry Chronicle		
			5
249			
G15	Gantt on Management		
			11
442.8			
G28	Genetics		
			6
500			
Am35G	Geographical Review		
			5
100			
G295	Georgia Agricultural Research		
			8
265			
St2A	Germany - Der Aussenhandel		
			5
424.8			
G47	Gleanings in Bee Culture		
			16
280.8			
H262	Harvard Business Review		
			14
385			
H36	Helvetica Chemica Acta		
			6
97.21			
D72	Herbs		
			10
100			
C12H	Hilgardia		
			7
44.8			
H65	Hoard's Dairyman		

298.8			7
H813	House and Home		
464			5
Sh9	How to Control Plant Diseases		
			5
9			
Id3	Idia.		
			9
100			
IL6S	Illinois Agricultural Experiment Station Research Progress		
			6
157.55			
Un353	Imports of Merchandise		
305.8			5
In2	India Rubber World		
513			5
In25B	Indian Academy of Sciences. Proceedings		
2.2	Indian Farming		12
In283			
			5
99.9			
In22B	Indian Forest Bulletin		
			9
99.8			
In2	Indian Forester		
			14
100			
In2P	Indiana Agricultural Experiment Station, Bulletin		
381			11
J825	Industrial and Engineering Chemistry		
			5
290.8			
In23	Industrial Quality Control		
			5
448.3			
An75	Institut Pasteur, Paris, France Annales		
			5
241.71			
B76	International Abstract of Biological Science		
464.9			9
In832	International Congress of Plant Protection, Proceedings		
443			11
Fl8	Introduction to Quantitative Genetics		
			19
100			
Io92	Iowa Agricultural Experiment Station, Research Bulletin		
275.28			7
Io94	Iowa Farm Science		

470			7
Io9	Iowa State College,	Journal of Science	
330.9			8
Is72B	Israel, Research Council		
261			11
Is7S	Italy Statistics		
450			9
P93J	Jahrbuecher fuer Wissenschaftliche	Botanik.	
381			16
J8223	Journal of Agricultural and Food	Chemistry	
10	Journal of Agricultural Science		9
J822			12
41.8			
Am3	Journal of American Veterinary Medical	Association	
49			7
J82	Journal of Animal Science		
448.39			12
Sol2	Journal of Applied Bacteriology		12
381			
As7	Journal of Associated Official	Agricultural Chemists	
448.3			17
J82	Journal of Bacteriology		
385			11
J822	Journal of Biochemistry - Tokyo, Japan		
381			46
J824	Journal of Biological Chemistry		9
442.8			
J828	Journal of Biophysical and Biochemical	Cytology	
444.8			7
J822	Journal of Cellular and Comparative	Physiology	
381			
J826	Journal of Chemical Education		6
334.8			6
J823	Journal of Chemical Physics		8
475			
J824	Journal of Chromatography		

410		7
J822	Journal of Comparative and Physiological Psychology	
41.8	Journal of Comparative Pathology	6
J82		
44.8		16
J823	Journal of Dairy Research	
44.8		24
J822	Journal of Dairy Science	
		9
450		
J829	Journal of Ecology. London, England	
421		18
J822	Journal of Economic Entomology	
		10
442.8		
B77	Journal of Experimental Biology	
410		8
J825	Journal of Experimental Zoology	
		54
280.8		
J822	Journal of Farm Economics	
99.8		12
F768	Journal of Forestry	
448.3		12
J823	Journal of General Microbiology	
403		11
J82	Journal of Geology	
442.8		7
Am3	Journal of Heredity	
		7
321.8		
J82	Journal of Home Economics	
		7
421		
J826	Journal of Insect Pathology	
280.38		6
J82	Journal of Marketing	
340.8		6
J82	Journal of Meteorology	
44.8		8
J824	Journal of Milk and Food Technology	
		12
444.8		
J826	Journal of Morphology	
		24
389.8		
J82	Journal of Nutrition	

334.8	Journal of Optica Society of America	5
Op7		
448.8		
J824	Journal of Parasitology	
396.8		13
J82	Journal of Pharmacology and Experi- mental Therapeutics	
381		12
J822	Journal of Physical Chemistry	
447.8		30
J82	Journal of Physiology	
		10
381		
J829	Journal of Polymer Science	
475		8
J82	Journal of Scientific and Industrial Research	
297.8		5
J82	Journal of Scientific Instruments	
		5
56.8		
J822	Journal of Soil and Water Conservation	
385		6
Ag8	Journal of the Agricultural Chemical Society of Japan	
		31
381		
Am33J	Journal of the American Chemical Society	
382		11
L84J	Journal of the Chemical Society	
		5
385		
In27	Journal of the Indian Chemical Society	
		7
251		
R81J	Journal of the Royal Statistical Society	
382		9
So12	Journal of the Science of Food and Agriculture	
		8
410		
J827	Journal of Wildlife Management	
385		9
J82	Journal Society of Chemical Industries of Japan	
		11
100		
K13S	Kansas Agricultural Experiment Station, Bulletin	

420		6
K13	Kansas Entomological Society Journal	
		11
100		
K41	Kentucky Agricultural Experiment Station, Bulletin	
24		5
Ea72	Kenya Dept. of Agric. Bulletin	
384		5
Z315	Kolloid Zeitschrift	
448.8		7
L11	Laboratory Investigation	
448.8		8
L22	Lancet	
282.8		9
J82	Land Economics	
		6
105.8		
L23	Landwirtschaftlichen Versucho Stationen	
		5
450		
L642	Linnaea	
514		13
Sy2	Linnean Society of New South Wales. Proceedings	
410.9		17
L84P	London, England. Zoological Society, Proceedings	
100		11
L93	Louisiana Agricultural Experiment Station, Annual Report, Circular, Bulletin	
		5
286.8		
M33	Marchés Tropicaux du Monde	
1.942	Marketing Activities	5
A8M34		
100		6
M38H	Massachusetts Agricultural Experiment Station, Bulletin	
442		5
R182Ma	Mathematical Principles of Biology	
280.12		5
G71	Megalopalis	
325		13
E23	Methods of Correlation	
100		12
M58S	Michigan Agricultural Experiment Station, Bulletin	

44.8			5
M595	Milk Dealer		
44.8			8
C864	Milk Plant Monthly		
100			9
M66	Minnesota Agricultural Experiment Station, Annual Report, Bulletin		
513			7
T5722S	Miscellaneous Reports of Research Institute for Natural Resources		
100			6
M69	Mississippi Agricultural Experiment Station, Annual Report, Bulletin		
100			5
M69Mi	Mississippi Farm Research		
100		10	
M693	Missouri Agricultural Experiment Station, Research Bulletin		
41.8			5
M74	Monatshefte fur Tierheilkunde		
41.8			7
M742	Monatshefte für Veterinärmedizin		
269.7			6
F49M	Monthly Return of The Foreign Trade of Japan		
269.5			10
St2M	Monthly Statistics of the Foreign Trade		
500			6
P533M	The Market Economy In the World of Today		
450			9
M99	Mycologia		
500			13
N21P	National Academy of Science, Proceedings		
396			7
Am3	National Formulary		
470			28
N213	National Geographic Magazine		
80			6
N216	National Horticultural Magazine		

513			
N212	National Institute of Sciences of India,		
	Proceedings		
280.38			8
N21	National Livestock Producer		
286.85			5
N21	National Provisioner		
			6
279.9			
C7663	Natural Resources and Economic Growth		
472			58
N21	Nature		
474			11
N213	Naturwissenschaften		
			9
259			
St2MnG	Netherlands, Marnstatistiek		
			5
464.9			
N47	New South Wales Dept. of Agriculture Plant Disease Leaflet. Sydney, Australia		
500			7
N48T	New York Academy of Science, Transactions		
			5
420			
N87J	New York Entomological Society Journal		
286.8			14
N488	New York Times		
23	New Zealand Journal of Agriculture		5
N48J			
			7
514			
N48A	New Zealand Journal of Science and Technology		
100			6
N81	North Carolina Agricultural Experiment Station, Bulletin		
			11
100			
813	North Dakota Agricultural Experiment Station, Bulletin		
			6
464.8			
N84	Notiziario sulle malattie delle piante. Milan, Italy		
389.9			5
N953	Nutrition Society, Proceedings		



100		10
Oh3S	Ohio Agricultural Experiment Station, Bulletin	
410		5
Oh3	Ohio Journal of Science	
100		6
Ok4	Oklahoma Agricultural Experiment Station, Bulletin	
		7
100		
Or3	Oregon Agricultural Experiment Station, Bulletin	
386		6
Or3	Organic Syntheses	
		10
80		
Pl16	Pacific Coast Nurseryman	
330.9		6
Pl94	Pacific Science Congress, Proceedings	
475		7
Pl74	Pakistan Journal of Scientific and Industrial Research	
		7
475		
Pl73	Pakistan Journal of Scientific Research	
280		5
G95	Papers on the Science of Administration	
		6
9.2		
P213B	Pará, Brazil (City) Instituto agronomier de norte. Boletim tecnico.	
280.8		5
P43	Personnel	
449.8		10
Ex8	Pest Control	
396.9		11
P49	Pharmaceutical Society of Japan, Journal	
25	Philippine Agriculturist	12
P542		
475		9
P53	Philippine Journal of Science	
334.8		8
P565	Physica	
334.8		9
P56	Physical Review	
334.9		6
L84	Physical Society of London, Proceedings	

450 P564	Physiologia Plantarum. Copenhagen, Denmark	
447.8 P563	Physiological Reviews	7
410 P56	Physiological Zoology	6
450 P566	Phytomorphology. Delhi, India	5
464.8 P56	Phytopathology	11
1.9 P69P	Plant Disease Reporter	13
450 P692	Plant Physiology	27
421 P692	Plant Protection Bulletin, Rome, Italy	5
450 P693	Planta; Archiv für wissenschaftliche Botanik. Berlin, Germany	9
80 P812	Popular Gardening	6
47.8 Am33P	Poultry Science	19
151.65 P96	Public Health Reports	6
275.29 In28	Purdue University, Agricultural Extension, Circular	6
280.8 Q2	Quarterly Journal of Economics	15
440.8 Q2	Quarterly Journal of Microscopical Science	12
281.9 Au73	Quarterly Review of Agricultural Economics	5
382 L84Q	Quarterly Reviews	8
23 Q37	Queensland Journal of Agricultural Science	8
398.8 Q4	Quick Frozen Foods	11

334.8			6
R11	Radiation Research		
421			6
R241	Redia giornale di Entomologia		
241.7			10
R25	Referaty Zhurnal Biology		
295.9			10
Am32J	Refrigeration Engineering		
157.41			6
C3374B	Retail Trade		
251.8			7
R32	Review of Economics and Statistics		
249.09			7
Am3Am	Revolution in Training		
450			6
R326	Revue Générale de Botanique. Paris, France		
455.63			6
Ir9	Roadside Flowers of Texas		
449.9			6
R66	Rome (City) Istituto Superiore di Sanita. Rendiconti.		
340.9			5
R81	Royal Meteorology Society		
501			9
L84B	Royal Society of London, England, Proceedings, Biological Sciences		
501			7
L84A	Royal Society of London, England, Proceedings, Mathematical and Physical Sciences		
251			6
R81JS	Royal Statistical Society, London Journal Series B		
470			42
Sci2	Science		
475			6
Sci24	Science and Culture		
470			24
Sci25	Scientific American		
470			6
Sci23	Scientific Monthly		

61			
M362	Seed Identification Manual		
45.8			6
SH3	Sheep and Goat Raiser		
			7
500			
Sm6M	Smithsonian Miscellaneous Collections		7
			7
307.8			
Sol2	Soap and Chemical Specialties		
			7
280.8			
J823	Social Forces		
420			6
ItI	Societa Entomologica Italiana. Bollettino		
383			5
Sol	Societe de Chimie Biologique Bulletin		
420			10
B41	Societe Entomologique de Belgique, Bulletin		
			8
420			
F84	Societe Entomologique de France, Annals		
			8
306.9			
Sol	Society Dyers and Colourist		
			5
442.9			
Sol5	Society for Experimental Biology (Great Britain) Symposia		
			8
442.9			
Sol	Society for experimental biology and medicine. Proceedings.		
			5
56.8			
So38	Soil and Plant Food		
			5
411			
K51	Soil Animals		
			9
56.8			
So3	Soil Science		
			10
56.9			
So3	Soil Science Society of America Proceedings		
511			5
Ak146	Soobshchennia Akad. Nauk. Gruz SSR.		

23	South Australia Dept. Agr. Journal	5
5084		
100		8
So8	South Carolina Agricultural Experiment Station, Bulletin	
100		5
G29So	Southern Cooperative Series Bulletin	
100		10
So82	South Dakota Agricultural Experiment Station, Bulletin	
334.8		14
Sp3	Spectrochimica Acta	
157.9		8
St2	Statistical Abstract of U.S.	
269.5		6
Pl72S	Statistical Bulletin	
284		5
C765	Studies in Income and Wealth	
249.38		7
Su72	Supervisory Management	
157.7		15
C76Ds	Survey of Current Business	
249.08		8
Sy8	Systems and Procedures Journal	
302.8		14
Tl62	TAPPI	
100		6
T31S	Texas Agricultural Experiment Station, Bulletin	
100		10
T31M	Texas Agricultural Experiment Station, Miscellaneous Publication	
81		7
M583N	The Hemerco	
81		7
M583N	The Hemerocallis Journal	
173.2		6
Soil	The Labor Market	

200.4		6
G42	The Language of Science	
		5
463.46		
J18Ae	The Wonderful Life of Flowers	
		5
99.81		
T484	Timberman	
286.89		
T552	Tobacco	5
451		5
T63B	Torrey Botanical Club, Bulletin	
		7
271.2		
C33	Trade and Shipping	
		11
382		
F22	Transactions of the Faraday Socceity	
		7
387		
K83Tr	Treatise on Analytical Chemistry	
26		5
T751	Tropical Agriculturist	
1	U.S. Congress	6
	Agricultural Appropriation House Hearings	
		6
1		
P69B	U.S. Bureau of Plant Industry. Bulletin.	
		11
1		
Ag84Ab	U.S. Dept. of Agriculture. Agriculture information bulletin.	
		11
1		
Ag84B	U.S. Dept. of Agriculture. Bulletin.	
		17
1		
Ag84C	U.S. Dept. of Agriculture. Circular	
	Note: Ceased publication 1958.	
		19
1		
Ag84F	U.S. Dept. of Agriculture. Farmers bulletin.	
		20
1		
Ag84J	U.S. Dept. of Agriculture. Journal of Agricultural Research.	
1		
Ag84L	U.S. Dept. of Agriculture. Leaflet.	5

1			18
Ag84Mr	U.S. Dept. of Agriculture.	Marketing Research Report.	
1			25
Ag84M	U.S. Dept. of Agriculture.	Miscellaneous publication.	
1			10
Ag84St	U.S. Dept. of Agriculture.	Statistical bulletin.	
1			23
Ag84Te	U.S. Dept. of Agriculture.	Technical bulletin.	
1			26
Ag84Y	U.S. Dept. of Agriculture.	Yearbook	
396			5
W85D	U.S. Dispensatory		
1.9			6
Ec7For	U.S. Foreign Agricultural Service.	Foreign Agriculture.	
49.9			5
Un3R	U.S. Livestock Sanitary Association	Proceedings of 63rd Meeting	
1			17
So32F	U.S. Soil Conservation Service.		
1955	Soil Survey Reports.	Series 1955.	
104			7
Up6	Uppsala. Lantbrukshögskolan.	Annaler.	
442.8			11
Uz1	Uzbekskii biologicheskii zhurnal.		
100			6
V59	Vermont Agricultural Experiment Station,	Bulletin	
41.8			6
V6426	Veterinariia		
41			5
St49	Veterinary Drug Encyclopedia		
41.8			16
V641	Veterinary Record		
23	Victoria, Australia. Journal Dept. of		9
V668	Agr.		
470			5
V81	Virginia Journal of Science		

448.8 V81	Virology	7
386.2 H243	Vitamins and Hormones	7
79.8 W41	Weeds	11
280.9 W527P	West Farm Economic Association, Proceedings	5
6 F2278	Western Livestock Journal	6
436.8 W63	Wiadomosci Parazytologiczne, Jr.	6
454 L54W	Wildflowers of North America	8
100 W75	Wisconsin Agricultural Experiment Station Bulletin	9
464.8 Z1	Zastita Bilja	5
384 Z322	Zeitschrift Anorganische Und Allgemeine Chemie	8
384 Z3	Zeitschrift für Analytische Chemie	10
442.8 Z34	Zeitschrift für Induktive Abstrammungs- und Vererbungslehre	6
442.8 Z33	Zeitschrift für Morphologie und Okologie der Tiere	5
474 Z3	Zeitschrift für Naturforschung	12
334.8 Z3	Zeitschrift Für Physik	6
384 Z38	Zeitschrift für Physiologische Chemie	10
444.8 Z3	Zeitschrift für Vergleichende Physiologie Jr.	12
410 Z3	Zeitschrift für Wissenschaftliche Zoologie	9

448.3 C33	Zentralblatt für bakteriologie, Parasitenkunde und infektions krankheiten.	8
41.8 Z5	Zentralblatt für Veterinarmedizin	6
384 Z39	Zettschrift für Lebensmittel	5
448.3 Z4	Zhurnal Mikrobiologii	5
410 Z792	Zoologické listy. q. Prague, Czechoslovakia	5
410 R92	Zoologicheskii Zhurnal, U.S.S.R.	12
410 Z751S	Zoologische Jahrbucher, an. Jena, Germany Abteilung für Systematik Okologie und Geographie der Tiere	11

TOTAL TITLES 466

TOTAL REQUESTS 4,354

COMPARISON OF INDEX MEDICUS TO BIBLIOGRAPHY OF AGRICULTURE

	<u>Index Medicus</u>	<u>Bibliography of Agriculture</u>
Authority	National Library of Medicine Dept. of Health, Education & Welfare	National Agricultural Library Dept. of Agriculture
Coverage	<p>Of the 220,000 items per year worthy of indexing, target level would be in neighborhood of 165,000 articles.</p> <p>In 1960, 125,000 articles indexed.</p> <p>In 1962, 150,000 articles to be indexed.</p> <p>In 1964, 180,000 articles to be indexed.</p> <p>Number of journals indexed: * 1700</p>	<p>[Includes] literature of agriculture and allied sciences received in NAL. Publications from any country indexed provided in one of languages of Western Europe or in Russian; or have summaries in one of these languages</p> <p>Number of citations: 1957-98,409 1958-99,470 1959-93,107 1960-96,849 1961-94,302</p> <p>Excludes: Unsigned articles, those signed with initials or pseudonyms, editorials most letters to editors, columns appearing regularly.</p> <p>Number of Journals indexed: total no. not available</p>
Format		
size	9 1/4" x 11 3/4"	8 1/4" x 10 3/4"
pages	413 pp. plus 8 (March 1962)	295 pp. (March 1962)
columns	3 per page	2 per page
type	Combination of roman, bold and italic fonts, in upper and lower case, along with adequate vertical spacing between lines.	Electric typewriter-upper and lower case. Consecutive number of the citation added by Bates numbering machine.
Frequency	12 monthly issues	Monthly
of		
Publication	Annual cumulation	December issue solely a subject, author index.
Currency	Between receipt of publication and appearance in <u>Index</u> , *average is 10 weeks.	Depends on the priority category of journal being indexed.
		<p>If <u>Circulation</u> copy, average time lapse between receipt of journal in Bibliography Division and appearance in Bibliography of Agriculture is <u>6 weeks</u>. If <u>non. circ.</u>, <u>8 weeks</u>.</p> <p>Note of policy: Lit. from U. S. and Canada received more than six months after</p>

Index MedicusBibliography of
Agriculture

publications (1 yr. for foreign publications) is generally not indexed. Exception: Any important scientific publication.

List of Journals Indexed (published)	Complete list of journals indexed in January 1962 issue. Also in cumulation for 1960 (published in 1961) Occasional Supplements (in 1962, March)	None (Each issue contains list of <u>New Periodicals and Serials in field of Agriculture</u> , indexed in USDA Bibliog. if falls within scope of Bibliog.)
List of Abbreviations for Journals	Appears in January issue.	Refer to USDA Misc. Publ. no. 765. <u>List of Periodicals Currently Received in the Library of the USDA.</u> July 1, 1957.
Price	\$20.00 per year. Index priced separately \$35.00 per year. Foreign \$25.00 for monthly. \$40.00 for Index.	\$10.00 per year Foreign: \$13.00.
Arrangement	<p>January issue:</p> <ol style="list-style-type: none"> 1. T.P. 2. Advertisement for other publications. 3. Preface. 4. List of subheadings 5. List of journals indexed, by abbreviation 6. List of journals indexed, alphabetically by title. 7. Changes in medical subject headings 8. Subject index 9. Author index 10. Recent U.S. publications (Cat. cards reprinted) <p>February-December issues:</p> <ol style="list-style-type: none"> 1. T.P. 2. Advertisement for other publications 3. Suppl. to list of journals indexed (March) 4. Key to Journal title abbreviations for select- 	<p>January issue:</p> <ol style="list-style-type: none"> 1. Outline of policy 2. Description of format, statement of frequency, availability of references cited. 3. Contents - by broad subject classification 4. Citations arranged by author under these broad classifications (Each numbered consecutively) 5. New periodicals and serials 6. Translations 7. USDA Publications 8. State Agri. Expt. Sta. Publications 9. State Agr. Ext. Serv. Publications 10. FAO Publications 11. Author index <p>February-November: same as above, omitting 1,2.</p> <p>December issue:</p> <ol style="list-style-type: none"> 1. T.P. 2. Contents 3. Cumulated author index, listed by citation no.

Index Medicus

- ed Review articles (i.e. articles in journals not routinely indexed)
5. Subject index
 6. Author index
 7. Recent U. S. publications

Bibliography of Agriculture

4. Subject index, lists references by citation number

Indexes

<p>Monthly issues have author index. All 12 issues cumulated into one alphabet, so that 12 monthly issues are superseded and can be discarded. 1960 has been published (in 1961)</p> <p>Number subject headings: *5000</p> <p>No cumulation of yearly indexes.</p>	<p>Monthly issues have author index.</p> <p>December issue has cumulative index and subject index to preceding 11 months - both give references by citation number.</p> <p>Number of subject headings</p> <p>_____</p> <p>No cumulation of yearly index</p>
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Citations ComparedHYPERTENSINPharmacology

MELLEROWICS H, NOWACKI P: [Comparative studies on respiratory and circulatory function in physically equal ergometric work in standing, sitting and lying position]. Z Krebsforsch 50:1002-32, Oct. 61 (Ger)

TAQUINI AC Jr, BLACQUIER PC, BOHR DF: Neurogenic factors and angiotensin in etiology of hypertensin. Amer. J. Physiol 201:1173-5, Dec 61

ANIMAL INDUSTRY-CATTLEFeeds and Feeding

83000 KNIGA, M.I. Sugar beets in the rations of dairy cows (in Russian) Vest. Sel'skokhoz Nauki, 1961 (6):42-49 Ref. June. 20V633
English summary includes effects on milk production.

83003 KRUKOVSKY, V.N. Quality of dairy products: vitamin A, carotenoid, iodine, and thiocyanogen values, and the refractive index of milk fat as influenced by feed, and by individual and breed differences. J. Agr. & Food Chem. 9(4):326-330. Ref. July 1 Aug. 1961 381J8223

Note completeness of this citation:

ANIMAL INDUSTRY-CATTLEBreeds and Breeding

82875 GT. BRIT. MINISTRY OF AGRICULTURE, FISHERIES AND FOOD. Cattle of Britain. Ed. 2. Gt. Brit. Min. Agr. Fisheries & Food. B 167,46 p. 1961. 10G 794 B

Index MedicusBibliography of
Agriculture

Aberdeen-Angus by H.R. Neilso
Ayrshire, by J. Graham;
Belted Galloway, by Lord D.
Stuart...etc. through selectio
of book - using 12 lines.

Furthermore, each of the names
indexed here appear in author
index. (Oct. 1961 p.111
Bib. of Ag.)

Sometimes titles are not
translated, as:

ANIMAL INDUSTRY-CATTLE

Breeds and Breeding

82867 EHRLEIHN, H.J.
Untersuchungen über die
Genauigkeit der Dichtebestimmung
von Bullensperma mittels einer
Zählkammer und des "Hellige
Haemoskapes" Hannover, 1961
85 p. Ref. 43EH8 Inaug.-Diss.-
Tierärztliche Hochschule,
Hannover.

Another variation in entry:

ANIMAL INDUSTRY-CATTLE

Feeds and Feeding

82957 CIAMAHOY, L. L., and
others. The feeding value of
corn gluten feed in rations
for lactating dairy cows and
growing dairy heifers.
Philippine Agr. 44(9):453-460
Feb 1961 25 P 542
L. E. Nazareno, J. S. Bontuyar
and P. L. Ordinario, joint
authors.

*National Library of Medicine Index Mechanization project
(Bull. Med. Lib. Assoc. Jan. 1961) p. 43, p. 82, p. 33.

SUBJECT ANALYSIS IN THE NATIONAL AGRICULTURAL LIBRARY
A Comparative Study of Terms Used in the Public
Catalog and in the Bibliography of Agriculture

Statement of the Problem

1. Can the subject headings used in the Table of Contents of the Bibliography of Agriculture, the terms used in the annual subject index of the Bibliography, and the subject headings of the NAL Public Catalog be brought together into one vocabulary (i.e., be made compatible) with a view to possible automation of subject analysis?
2. If the two systems can be made compatible, suggest a plan, outlining the steps necessary for the present staff to evolve a thesaurus useful to both activities.
3. If the plan above appears to contain features contrary to the work of each activity, suggest an alternate plan for obtaining the desired results.
4. Originally, the problem also included the following:

Can the classification scheme for Forestry collections (Oxford System of Decimal Classification) and its index be converted and merged into the same schedules so that it could be incorporated at some future date, if this appeared desirable?

We feel that, in view of the project currently being carried on by Mr. Yerke, any decision regarding forestry terms would be premature. Mr. Yerke is preparing an index to the Oxford System. His study and the terms used in the Bibliography of Agriculture and the Public Catalog need to be considered in relation to each other. His selection of terms may well affect the other two systems and vice versa.

Survey of Situation

To obtain answers to Question 1, above, a pilot study was set up which would reveal the extent of the problem and the number of terms to be handled.

Outline of Method

The sections on INSECTS and FORESTRY were selected for the sample study.

1. Thermofax duplicates of the Catalog Section's Subject Authority File were made.
2. These headings were matched against the terms used in the subject index for 1961 of the Bibliography of Agriculture. (The Bibliography has no authority file as such for its index terms.)
3. The results of this matching were sorted into categories as follows:
 - a. Heading the same.
 - b. Need adjusting (heading similar, or nearly like; heading dissimilar)
 - c. Heading not used in Bibliography of Agriculture.
 - d. See references.
 - (1) Heading referred to Different.
 - (2) Heading referred to Same.
 - (3) Heading referred to not in Bibliography of Agriculture.
4. The headings in all categories were then consulted in the NAL Public Catalog and the cards counted to determine the number that would be affected by revisions, as well as those that would not need to be changed.
5. The 1961 subject index was scanned for all entries using the word Insect or Insects and Forestry, alone or in combination with other words.
 - a. "P" slips were made for each occurrence of these words.
 - b. All related See and See Also references were noted as the scanning was done.
 - c. Comparison of these headings with the cataloging authority file was made in the same manner as above and sorted into categories as follows:

- (1) Need checking in NAL authority file.
- (2) Heading the same.
- (3) Heading not in NAL.
- (4) Heading needs adjusting.

Headings Investigated

<u>Subject</u>	<u>Heading Same</u>	<u>In NAL; not B. of A.</u>	<u>In B. of A.; not NAL</u>	<u>Need Adjusting</u>
Insect(s)	6	10	75	68
Forestry	<u>9</u>	<u>11</u>	<u>2</u>	<u>56</u>
Total	15	21	77	124

A total of 816 subject slips were examined:

Insect(s) - 476

Forestry - 340

The breakdown of headings in the above table includes:

1. Main headings only.
2. Subjects referred to in See references.

It excludes:

1. Subdivisions of main headings.
2. Subjects referred to in See also references.

This method of reporting was chosen because:

1. We felt that adjustment of main headings constitutes a major activity on the part of the professional staff. Activities related to subdivisions can be carried out, to a large extent, by clerical staff on instruction from the professionals.
2. Subjects referred to in See also references would lead us far afield from our defined area of investigation.

Catalog Entries Involved (Number of Cards)

<u>Subject</u>	<u>Need changing</u>	<u>Remain unchanged</u>	<u>Total</u>
Insect(s)	4419 (98.5°/°)	66 (1.5°/°)	4485
Forestry	3938 (85°/°)	693 (15°/°)	4631
Total	8357 (91.8°/°)	759 (8.3°/°)	9116

All catalog cards were counted, including subdivisions, since any adjustment would require similar handling of each card.

In addition to the catalog cards which would need changing, all related subject slips, including cross-references and their tracings, would have to be adapted in the Subject Authority File.

Scanning the Bibliography of Agriculture for terms on Insects revealed 46 headings which do not begin with the word Insects or have references to them from Insects. Following the same technique, we located 12 such headings for Forestry. These were not checked against the cataloging list at this time, but are mentioned here to give an indication of the scope of the problem, particularly with regard to references.

The extent of the problem is further illustrated by the fact that the Bibliography of Agriculture 1961 index includes no entry beginning with the singular form Insect. The cataloging Subject Authority File contains 21 slips for such terms.

Another major discrepancy between the two systems results from the existence in the Subject Authority File of a very old See reference: Insects. See Entomology. This problem area was not pursued, but it is obvious that reconciling the subjects would be very time consuming.

Also, in the cataloging Subject Authority File in both areas, form subdivisions (Congresses, Periodicals, Research, etc.) were noted in passing:

Insect(s) - 7

Forestry - 37

Many of these appear as main headings in the Bibliography, but an occasional one is used as a subheading. This is indicative of another problem area which must be resolved in the preparation of policy and guidelines.

To give some idea of time and cost, present production standards for the work involved are given below.

<u>Activity</u>	<u>Civil Service grade</u>	<u>Standard per hour</u>
Subject reworking	GS 7-11	2
Card pulling	GS 4-5	25
Card servicing	GS 4-5	30
Card typing	GS 4-5	25
Filing	GS 4-5	100

Beyond that, we are unable to project time and cost estimates. The time available for this study was too limited, and our sampling too small when compared with the approximately 87,000 slips in the Subject Authority File and the estimated 21,000 terms, exclusive of subheadings, in an annual index of the Bibliography of Agriculture. However, the results of even such a small survey give a frightening picture of the magnitude of any attempt by the present staff to reconcile the two systems as they now exist.

A close look at our analysis of the situation causes us to reject this approach and recommend another which we feel is far more practical in the long run. To make adjustments as described above would mean combining two systems which are not in themselves wholly satisfactory. Using them as the basis for the new list would permit old errors to persist and new errors, unless due care were exercised, to creep in. What is more, handled by two, already understaffed divisions, it would stand a good chance of never being done at all, however conscientious that staff might be.

Rather than patching and piecing together a thesaurus, it is recommended that consideration be given to an alternate plan which would permit an all-out overhaul of the two lists to produce one tailor-made for agriculture libraries everywhere.

The plan outlined below is recommended. Library staff members will recognize that it is not a totally new thought. Even without extensive studies to substantiate their thinking, NAL catalogers have long believed that a fresh approach is necessary to produce a consistent, accurate, and up-to-date subject list. For this reason, when plans were made for issuing the preliminary edition of the Subject Heading List, arrangements were made for punching paper tape to be used later for just such a purpose. Wishful thinking leads us to hope that possible automation of the Bibliography of Agriculture subject index will make available a comparable tape for use in compiling a unified thesaurus.

Recommended Plan

This proposal consists of two phases.

Phase I relates to the "kick off" stage and calls for a project of limited duration to:

1. Develop and issue a subject policy and guidelines to serve as a basis for preparing a definitive thesaurus of agricultural terms.
2. Prepare, edit, and issue the first edition of the thesaurus.
3. Plan in detail organizational structure required for keeping the thesaurus up to date and issuing revised editions.

Funds should be obtained to finance staff and equipment for the initial stage of preparing guidelines and planning for publication of the first edition of the thesaurus:

- 1 Subject Analysis Coordinator: GS-13
- 1 Cataloger: GS-12
- 1 Indexer: GS-12
- 1 Nonprofessional assistant: GS-6

The actual preparation, editing, and issuing of the first edition would require additional staff:

- 8 Cataloger-Indexer Subject Specialists: GS-11 (one for each major subject field covered by the Bibliography)
- 6 Nonprofessional assistants: 1 GS-5
3 GS-4
2 GS-3

Consultants from agencies, societies, etc. (to work with the subject specialists in developing each part of the list)

All Civil Service grades above have been suggested on the basis of present Library structure.

The cost of this entire phase cannot be reasonably estimated without additional investigation which would include, ideally, a time study of comparing and revising a greater variety of catalog and Bibliography subjects as recorded on tape.

This phase might well reveal that, where overlapping of activities in Bibliography of Agriculture and NAL cataloging occurs, merging of staff could also be considered for the continuing operation. Familiarity with a thesaurus common to both activities might make this combination of talents and professional ability practical and profitable. The language and subject competence of these "ambivalent" staff members would be utilized to best advantage in a combined operation. One can see a streamlined organization here that would be a director's dream. It would be worth keeping in mind.

Phase II is concerned with the continuing operation and is described here only briefly. As pointed out above, the initial project should be assigned the responsibility for developing the details on the basis of its experience in preparing the first edition.

Regularly appropriated funds should provide for continuing concentration on subject analysis. The Subject Analysis Coordinator would require a permanent staff of nonprofessional assistants.

Additions to and changes in the thesaurus would originate with the cataloging and indexing staff. The proposals would be submitted, through proper channels, to the Coordinator. In cooperation with a review committee composed of senior catalogers and indexers, the Coordinator would review the additions and changes and prepare revisions of the list.

The Coordinator, also, would be responsible for an overall review prior to the publication of each new edition.

In a Nutshell

The headings now in use in the Bibliography of Agriculture and in the Public Catalog certainly cannot be considered truly compatible in their present form. There are many basic similarities, however, and the differences which exist could be reconciled, but at great cost of time and labor not presently available. Also, if such a project were carried out under pressure for quick results, present weaknesses in both systems could not be eliminated.

Whether or not speed is determined to be of the essence, in order to merge the two systems, it appears preferable to "close off" and, ideally, publish the present card catalog, rather than to attempt to change the many cards which would be involved in cases where the Bibliography treatment seems to be the better one. In any event, the preparation of the necessary thesaurus would require the cooperative efforts of both indexing and cataloging staff.

In view of the above statements, it appears that the wise course of action would be to make haste slowly with regard to the development of a single

subject heading system for the National Agricultural Library. On the other hand:

1. The decision to automate or not to automate the Bibliography of Agriculture should not be dependent upon this project.
2. Immediate attention should be given to developing and implementing plans for producing an agricultural subject heading list, on the basis of:
 - a. The tape byproduct of the preliminary edition now being prepared for publication.
 - b. Tape which will be available if the Bibliography is automated.

The resulting thesaurus of agriculture terms should be published and made readily available.

3. Concurrent with the development of a subject heading list, consideration should be given to the possibility of devising or adopting an improved classification scheme.

ASTIA Information Storage and Retrieval System

Content: Research reports from the Department of Defence and its contractors

Forms in which information is stored

1. File of documents arranged by A(STIA) D(ocument) number
2. TAB (Technical Abstract Bulletin) a semi-monthly publication consisting of
 - a. Display: listing of documents with complete citation, abstract and complete list of assigned descriptors, the most important descriptors being starred.
 - b. Descriptor index: listing of each document in very abbreviated form, but with all assigned descriptors, under each of the principal (starred) descriptors, with reference to its position in the display. This index is cumulated quarterly
 - c. Index by AD number
3. Catalog cards for documents made in quantity and stored by AD number
4. Magnetic tape files

Document processing

1. Supporting apparatus
 - a. Theasaurus of ASTIA Descriptors: a list of descriptors approved for indexing. The volume includes an alphabetical list and a list arranged by subject categories
 - b. Thesaurus Code Manual: alphabetical list of descriptors with code numbers
 - c. Guidelines for ASTIA Descriptors
 - d. ASTIA Guidelines for Cataloging & Abstracting
 - e. List of open-ended terms (specifics such as project names, components, etc.)

2. Document description: AD numbers are assigned and descriptive cataloging is done before the documents get to the subject analysis group. This information is entered on a standard form which goes with the document
3. Subject analysis: humans with training in subject matter and indexing study documents and add to standard form
 - a. Abstract of the document or reference to place where abstract may be found. Most documents come with abstracts which can be used as is or edited and adapted
 - b. Subject divisions for TAB
 - c. Descriptors with code numbers, principal descriptors starred
 - d. Open-ended terms with codes

Preparation of TAB and catalog cards

1. Typewriter operations with Synchro-Tape
 - a. Preparation of card master and complete tape
 - b. Preparation of copy for TAB from complete tape and concurrent preparation of tape for descriptor index in which abstract and much of citation is suppressed
2. Computer operations
 - a. Input: paper tape from 1,b. above
 - b. Operation: starred descriptors used in the issue arranged alphabetically followed by abbreviated entry for pertinent documents arranged by AD number on magnetic tape
 - c. Output: printout of TAB index copy on line printer (I am not sure whether this is an on-line operation or not. It may be that output is the magnetic tape and it is printed out off line)
 - d. Cumulation and printing of cumulative indexes at proper intervals
3. Miscellaneous manual operations
 - a. Shingling TAB copy (display)

- b. Page make-up of TAB index
- c. Reproduction of cards from masters and filing them by AD number

Computer storage and retrieval

1. Equipment

- a. Univac SS90 magnetic tape system
- b. Sorter
- c. Key punch(es)

2. Input

- a. For storage: punched card containing code for descriptor (or open-ended term) and AD number
- b. For retrieval: punched card containing code for descriptor prescribed for search, search number and coordination level code (number of terms to be coordinated)

3. Files

- a. Magnetic tape master descriptor record arranged by descriptor code with secondary arrangement by AD number. Two 50-word items are on each block of tape--descriptor code and 49 AD numbers. Zero fill is used for incomplete blocks. New block is started for 50th document and begins again with the descriptor code. 470,000 numbers are possible on a 2,400 foot reel of tape.
- b. Magnetic tape file for open-ended terms
- c. Magnetic tape file for sources
- d. Punched card file for open-ended terms with word(s) and code number(s)

4. Updating file. Master descriptor file is updated twice weekly from punched cards (see 2,a above)

5. Preparation of inquiry

- a. Request is made on a standard form and assigned bibliography number and security classification
- b. Retrieval terms are assigned by analyst and coordination levels are indicated

- c. Inquiry card is punched (see 2,b. above)
 - d. Punched cards are sorted off line into descriptor order
6. Search: As cards are read into the system cards with like term codes are combined into a single 2-word record--term code and consolidated search and coordination level code. Master retrieval tape is read until a match of term code with input card is found. Master record is copied onto Output Tape I in 2-word blocks--AD number and search and coordination level data. Next matching master record is merged with this on Output Tape II, and so on. Final output tape contains identification of AD numbers which satisfy the search .

A group of terms may be treated as a single term for the search

Original program permitted 10 simultaneous searches with 4 coordinations. Modified program permits 6 levels of coordination, but more than 4 are rarely used. Other modifications permit a combined total of 60 retrieval term coordinations in one run with any combination of searches and number of terms

Retrievals on source and open ended terms are separate runs

Other modifications of program are under consideration including a high-low tape merge to speed up the computer run.

Present capacity is 40 searches in an 8-hour day.

- 7. Output: Punched cards with coordination level, AD number, bibliography number and date
- 8. Completion of answer to inquiry
 - a. Output cards are sorted off line by AD number
 - b. Catalog cards are pulled for AD numbers indicated
 - c. Cards are screened by analyst
 - d. Selected cards (or documents) are supplied to inquirer

Other uses of computer: Computer is used for control of inventory of documents, for calculating stock required, and for checking of security classification and need to

know. Since these operations have no parallels at present in the National Agricultural Library, they are merely noted.

Other modifications under consideration

1. Use of Randex--random access equipment
2. Printing out of bibliographies. Paper tapes from TAB preparation to be converted to magnetic tape and used to print out bibliographies complete with abstracts
3. Weighting descriptors

Implications for NAL

1. We have here a scheme that works, not perfectly to be sure but adequately, for a large collection covering a wide range of subjects. The initial collection of 200,000 documents is about equivalent to two years accumulation of the Bibliography of Agriculture under our present system. The subject range is narrower than ours, but still quite wide
2. Demands on the system rose sharply when answers could be expected within a reasonable time. This can be anticipated for us
3. A better controlled vocabulary than that of the Bibliography of Agriculture is imperative for a machine retrieval system
4. Full advantage of the computer is not being taken in the preparation of TAB. Bibliography of Agriculture printing should be a major part of any machine system for us.
5. Use of any paper tapes generated in the preparation of the Bibliography of Agriculture ought to be usable as input for the retrieval system thus avoiding the duplicate punching of cards

A Guide to U. S. Indexing and Abstracting Services in Science and Technology -- Report 101, dated June 1960, by the Science and Technology Division of the Library of Congress -- gives the following data on indexing and abstracting services for agriculture and related sciences:

ABSTRACTS

American Potash Institute, Inc., 1102 16th St., N. W., Washington 6, D. C.

quarterly; since 1957; 200 informative abstracts a year from 600 journals; subject and geographical classification; controlled gratis

Potash as a plant nutrient, results of potash usage on crops and soils, methods of fertilizer application, soils (fertility and fertilizers). Some issues are devoted to specific crops, as Forage, Forests, Fruits, etc.

AGRICULTURAL INDEX

The H. W. Wilson Co., 950 University Ave., New York 52, N. Y.

monthly except Sept.; since 1916; 40,000 entries a year from 115 journals, 1,000 books, and 3,000 pamphlets; quarterly, annual, and biennial subject cumulative indexes; sold on the service basis with rates determined by the use made by the subscriber as measured by the number of indexed periodicals received by the subscriber

agricultural chemicals, bacteriology, botany, ecology, entomology, farm economics, forestry, horticulture, mycology, rural sociology, soil science, veterinary science, zoology

AGRICULTURAL NEWS LETTER

Public Relations Department, Du Pont Co., Wilmington 98, Del.

3 times a year; since 1933; [100] abstracts a year from 20 journals and 15 technical reports; no index; controlled gratis

agricultural research reports with specific reference to the use of agricultural chemicals and new agricultural practices

ANNUAL REVIEW OF PLANT PHYSIOLOGY

Annual Reviews, Inc., 231 Grant Ave., Palo Alto, Cal.

annually; since 1950; 2,500-3,000 abstracts a year; author and subject indexes; \$7 domestic, \$7.50 foreign

all areas of research in plant physiology

BIBLIOGRAPHY OF THE LITERATURE OF THE MINOR ELEMENTS and their Relation to Plant and Animal Nutrition

Chilean Nitrate Educational Bureau, Inc., 120 Broadway, New York 5, N. Y.

[4th edition: vol. 1 (all material 1935-47) 1948, vol. 2 1950, vol. 3 1953, vol. 4 1955; 1,300 abstracts a year; author, element, general nutrition, and botanical indexes; no information

aluminum, arsenic, barium, beryllium, boron, bromine, cadmium, calcium, cerium, cesium, chlorine, chromium, cobalt, copper, fluorine, gallium, iodine, iron, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel, rubidium, ruthenium, selenium, silicon, silver, sodium, strontium, sulphur, tellurium, titanium, vanadium, zinc, zirconium]

BRITTONIA

Section: The Taxonomic Index

The New York Botanical Garden, Bronx Park, New York 58, N. Y.

quarterly; since 1938; 500 entries a year; subject classification; subscription to Brittonia or membership in the American Society of Plant Taxonomists

taxonomy of plants and related morphology and genetics, paleobotany, plant ecology and geographical distribution

ECONOMIC BOTANY

Section: Utilization Abstracts

The New York Botanical Garden, Bronx Park, New York 58, N. Y.

quarterly; since 1947; 36 abstracts a year from 20 journals, 10 books, and 10 technical reports; no index; \$8

economic botany, including any aspect of plant utilization from the fields of biology, chemistry, agriculture, forestry, anthropology, ethnology, geology, geography, etc.

INDEX TO THE LITERATURE OF AMERICAN ECONOMIC ENTOMOLOGY

Entomological Society of America, 1530 P St., N. W., Washington 5, D. C.

annually; since 1917; 16,000 main entries a year; subject classification; varies, last was \$6 for 2-year issue

American economic entomology

LIST OF PUBLICATIONS AND PATENTS

Southern Utilization Research and Development Division, Agricultural Research Service, U. S. Department of Agriculture, P. O. Box 19687, 1100 Robert E. Lee Blvd., New Orleans 19, La.

semiannually; since 1941; 140 informative abstracts a year from 140 technical reports and 10 patents; subject and author index; gratis

citrus and other southern fruits, cotton, cottonseed, peanuts, pine gum, rice, sugar, cane, tung and other oilseeds, vegetables

LIST OF PUBLICATIONS AND PATENTS

Western Regional Research Laboratory, Western Utilization Research and Development Division, Agricultural Research Service, U. S. Department of Agriculture, 800 Buchanan St., Albany 10, Cal.

semiannually; since 1955; 135 indicative abstracts a year from 120 technical reports and 15 patents; subject classification; gratis

utilization research on agricultural products, including field crops, fruits and vegetables, poultry and eggs, wool; also analytical methods, antibiotics, enzymes, fats and oils, pharmacology, proteins

NITROFURAN ABSTRACTS AND BIBLIOGRAPHY

Editorial Section, Scientific Information Division, Eaton Laboratories, Norwich, N. Y.

Abstracts weekly and Bibliography annually; since 1944; 600-700 indicative abstracts a year from 800 journals and 100 books; Nitrofurans Bibliography is the annual author and subject indexes to Nitrofurans Abstracts; gratis

biologic activity of the nitrofurans from the world's scientific literature

THE RICE JOURNAL

Section: Rice Abstracts

823 Perdido St., New Orleans, La.

monthly; since 1952; 100 informative abstracts a year; no index; \$5

cultivation, processing, merchandising of rice; special emphasis on research work

SELECTED LIST OF AMERICAN AGRICULTURAL BOOKS IN PRINT AND CURRENT AGRICULTURAL PERIODICALS (Library List No. 1)

U. S. Department of Agriculture, Washington 25, D. C.

biennial; since 1929; 800 entries a year; subject classification, author index; gratis

agricultural engineering, agricultural economics, agricultural history, agricultural teaching, animal husbandry, apiculture, conservation, extension work, fertilizers, field crops, food technology, forestry, fungi and plant diseases, horticulture, insects and their control, plant breeding and propagation, plant nutrition, rural sociology, soils

TOBACCO ABSTRACTS

Tobacco Literature Service, D. H. Hill Library, Agricultural Experiment Station, North Carolina State College, Raleigh, N. C.

monthly; since 1956; 2,100 abstracts a year from 600 journals, 50 books, and 80 patents; annual subject and monthly and annual author indexes; \$7, domestic, \$10 foreign

Tobacco: botany, by-products, chemical and physical properties of tobacco, climatological factors, diseases, field cultural practices, genetics, harvesting and curing, health, history, insects, manufacturing technology, marketing, physiology and biochemistry, policy, production economics, seedling production, soils, varieties

WEEDS

Section: Bibliography of Weed Investigation (prepared by Crops Research Division, ARS - USDA, Beltsville, Md.)

Weed Society of America, Dept. of Agronomy, University of Illinois, Urbana, Ill.

quarterly; since 1950; 170 entries a year; subject classification; \$6

weeds: botany, characteristics, control, economics, general herbicides (including calculations; effect on soils, livestock, and humans; equipment; and methods of application), investigations (chemical and biochemical), legal aspects

WORLD'S POULTRY SCIENCE JOURNAL

Section: Review of Poultry Publications

World's Poultry Science Association, 810 West Lane Ave., Columbus 10, Ohio

quarterly; since 1945; 600 informative abstracts a year; subject classification; included with membership \$3, others \$3.50

material related to poultry husbandry in fields of genetics, management, nutrition, pathology, physiology, products and marketing

ABSTRACTS OF RECENT PUBLISHED MATERIAL ON SOIL AND WATER CONSERVATION
Soil and Water Conservation Research Division, Agricultural Research
Service, U. S. Department of Agriculture, Plant Industry Station,
Beltsville, Md.

semiannually; since 1949; 400 informative abstracts a year from 25 jour-
nals; 20 technical reports, and other sources; no index; gratis

biology; economics of conservation; crops; forestry, woodlots, shelter-
belts; hydrology; soil and water management; soil science

BULLETIN OF MARINE SCIENCE OF THE GULF AND CARIBBEAN

Section: Regional Bibliography

The Marine Laboratory, 1 Rickenbacker Causeway, Miami 49, Fla.

annually; since 1951; 300-350 entries a year; subject classification;
\$2

Marine science of the Gulf and Caribbean region or from SE United States
when pertinent to above region. Covers fields of meteorology, marine
geology, oceanography, marine biology and fisheries investigation,
management and technology.

COMMERCIAL FISHERIES ABSTRACTS

(journal, but abstracts can be cut into 3 by 5 cards for filing)
Bureau of Commercial Fisheries, U. S. Department of the Interior,
Washington 25, D. C.

monthly; since 1948; 400 informative abstracts a year from 60 journals
and 20 technical reports; subject classification; controlled gratis

fishery technology: bacteriology, biology, chemistry, engineering,
and zoology

FISHERIES PUBLICATION INDEX (U. S. Fish and Wildlife Service Circular
No. 36, 1920-54)

Superintendent of Documents, U. S. Government Printing Office, Washington
25, D. C.

1920-54, planned 1955-60; since 1953 2,800 entries a year; author
and subject indexes; \$1.50

fish culture, fishing equipment and methods, fish and fisheries (U.S.),
marine biology, seals, sport fishing

JOURNAL OF FORESTRY

Section: Current Literature

Society of American Foresters, Mills Bldg., 17th & Pennsylvania Ave.,
N. W., Washington 6, D. C.

monthly; since [1917]; 400 entries (books, bulletins, and technical
reports) a year; subject classification; \$9

forestry and related subjects

JOURNAL OF RANGE MANAGEMENT

Section: Current Literature

American Society of Range Measurement, P. O. Box 5041, Portland, Ore.

bimonthly; since 1948; 500 journals and technical report entries a year;
\$8 domestic, \$8.50 foreign

range plants, improvements and influence; range and livestock economics;
range and pasture management

JOURNAL OF SOIL AND WATER CONSERVATION

Section: Literature Briefs

Soil Conservation Society of America, 838 Fifth Ave., Des Moines 14,
Iowa

bimonthly; since 1946; 50-75 journal, book, and report abstracts and
entries from 10 journals, 40 books, 50 technical reports, and 50 other
sources; no index; \$5

soil and water conservation, land use, forestry, range, wildlife

SPORT FISHERY ABSTRACTS

Bureau of Sport Fisheries and Wildlife, U. S. Fish and Wildlife Service,
Washington, D. C.

quarterly; since 1955; 850 informative abstracts a year from 75 jour-
nals and 10 technical reports; quarterly, annual, and planned quinquen-
nial subject and author indexes; gratis

fishery management and research and as many related disciplines as time
permits

WILDLIFE ABSTRACTS

U. S. Fish & Wildlife Service, Patuxent Research Refuge, Laurel, Md.

1935-51, 1952-55; since 1954; total 17,000 abstracts, cumulative index for Wildlife Abstracts; one copy available free to subscribers of Wildlife Review, others available at \$2 from U. S. Government Printing Office, Washington 25, D. C.

general conservation, wildlife management, vertebrate and plant ecology, ornithology, mammalogy, herpetology, and related fields

WILDLIFE REVIEW

U. S. Fish & Wildlife Service, Patuxent Research, Laurel, Md.

3 to 6 times a year; since 1935; 1,655 critical abstracts a year; author index; gratis

general conservation, wildlife management, vertebrate and plant ecology, ornithology, mammalogy, herpetology, and related fields

THE AUBURN VETERINARIAN

Section: Foreign Abstracts (and a few domestic)

School of Veterinary Medicine, Auburn, Ala.

3 times a year; no information; 300-400 abstracts a year from 10 journals; annual subject index, decennial cumulative; \$2

subjects of interest to students and practitioners of veterinary medicine

INDEX-CATALOGUE OF MEDICAL AND VETERINARY ZOOLOGY

Beltsville Parasitological Laboratory, Animal Disease and Parasite Research Division, Agricultural Research Service, U. S. Department of Agriculture, Beltsville, Md.

annually; since 1891; 11,000 author entries arranged alphabetically from 22,000 journals and other sources; annual supplement \$1.25 (specific/subspecific names, parasite, anti-parasite, and host indexes ca can be inspected at the address given above)

Animal, medical, and veterinary parasitology, including parasitic Protozoa, Trematoda, Cestoda, Nematoda, Acanthocephala, arthropods, and minor groups together with their invertebrate and vertebrate hosts, treatment of the diseases caused by parasites, and plant nematology. Related fields are biochemistry, biology of free-living nematodes and protozoa, ecology, nutrition, pathology, public health and sanitation, systematic zoology, and nomenclature of parasites.

JOURNAL OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION
Section: Current Literature

600 South Michigan Ave., Chicago 5, Ill.

semimonthly; since 1915; 200 abstracts a year from 100 journals; semi-annual subject index; \$15 domestic, \$17 foreign

veterinary medicine

M. S. U. VETERINARIAN

Section: Abstracts and Reviews

302 Students Services Bldg., Michigan State University, East Lansing, Michigan

3 times a year, since 1940; 40 critical, informative abstracts a year from 25 journals; no index; \$2

veterinary medicine

THE VETERINARY DRUG ENCYCLOPEDIA

Drug Publications, Inc., 11 East 36th St., New York, N.Y.

annually; since 1953; 2,300 entries a year; therapeutic and manufacturers index; \$7 domestic, \$8 foreign (free to practicing veterinarians)

veterinary drugs and feed additives

VETERINARY REFERENCE AND DATA SERVICE (loose-leaf)

American Veterinary Publications, Inc.,
18 West Micheltorena St., Santa Barbara, Cal.

monthly; since 1960; 1,200 informative abstracts a year from 100 journals and 20 books; annual subject index; \$60 for Small or Large Animals, \$100 for all

all phases of clinical veterinary medicine and surgery

An example of an abstract made by a trained technician in that field (chemistry). Abbreviations are used to save space.

Reaction of organocadmium compounds with dibasic acid chlorides.
III. Malonyl chloride. M. Renson and J. Beetz (Univ. Liege, Belg.). Bull. Soc. Chim. Belges 70, 537-48 (1961); cf. CA 54, 17249g.--CH₂(COR)₂(I) are obtained (21-43% yield) by treatment of 1 mole CH₂-(COCl)₂(II) with 3 moles R₂Cd in Et₂O at 5-10°. To a soln. of RMgBr, prepd. from 0.86 mole each RBr and Mg in 500 ml. Et₂O, is added (small portions, with stirring and cooling) 0.43 mole anhyd. CdCl₂. After the Gilman test indicates the complete disappearance of RMgBr, 0.14 mole II in 50 ml. abs. Et₂O is added dropwise at 0-5°, the mixt. stirred 0.5 hr. at this temp., slowly hydrolyzed with dil. HCl, the aq. layer extd. with Et₂O, the combined exts. washed with 5% aq. NaHCO₃, dried over MgSO₄, the Et₂O evapd., and the residue distd. (first at atm. pressure and then in vacuo). Thus are prepd. the following I [R, % yields, b.p. (mm), and m.p. of dioxime deriv. given]: Et, 36, 173°, 90°; Pr, 31, 93° (15), 77°; Bu, 43, 120° (13), 95°; n-C₅H₁₁, 26, 144° (13), 76°; n-C₆H₁₃, 21, 125-7° (1.3), 83°. I are purified by adding a hot, filtered soln. of 70 g. CuSO₄ in 600 ml. H₂O to the soln. of I in an equal vol. of EtOH, treating with NaHCO₃, allowing the mixt. to stand in the refrigerator overnight, filtering off the Cu salt, decomp. with dil. H₂SO₄, extg. the I with Et₂O, drying, and distg. The following by-products are formed in the reaction: RBr, R-R, a compd. C₁₇H₂₇O₂, b₁₂ 100-1° (in the case of Am₂Cd), and higher boiling fractions of unknown compn. E. Tobler

An example of a short abstract on cards that can be filed. The decimal system is used for classifications. The back side of the cards are not used and 8 abstracts are placed on one page.

581.55

Poore, D.E.M.: I. BRAUN-BLANKET SYSTEM (The Braun Blanquet System).
J. Ecology, 43 (1955)1, str. 226-244.

Biljni ekolozi su za poslednjih četrdeset godina mnogo radili na razvijanju i sistematizaciji metoda za opisivanje i klasifikaciju biljnih zajednica. Najpoznatije su dve škole iz ove oblasti. Braun Blanquet je bio glavni eksponent Ciriško-Monpelje škole, kod koga je autor ovog članka lično radio dva meseca upoznavajući tehniku rada i ciljeve pomenute škole. Autor iznosi glavne principe Braun Blanket sistema koje je ovaj postavio u svojim glavnim delima i naučnim radovima. Osnovna biljna jedinica o kojoj govori Braun Blanket je asocijacija. Autor je ovde izneo i metodologiju kojom se služio tvorac ovog sistema, kao i tehniku poljskih ispitivanja.
- 1 tab., 1 sl., 31 pod.cit.lit.

M. Marić

119206

Bilten dokumentacije za poljoprivredu, šumarstvo, drvnu i duvansku industriju 7 (1956) I

(See next sheet for how they are set up)

An example of ^babstracts being printed on cards for filing. Placed three per page. The back side of the card may be used for a continuation of the text. Requires an abstractor that knows the subject matter.

FWS 3.335

CANNING - FISH - ROE AND MILT

UDC 664.955

Fiskekonserveres [CANNED FISH PRODUCTS]. Konserver (Det Tekniske Forlag, 1957 Vester Farimagsgade 29, Copenhagen V., Denmark), Vol. 15, No. 3, p. 32, March 1957. 1 p. In Danish.

The article describes a membrane-free canned product of cod roe made by the Technological Laboratory of the Danish Ministry of Fisheries. Similar products are made in other countries. The procedure was as follows: the membrane was cut up and the roe mixed in a mixing machine. The membrane which did not twist round the stirring rod was removed by passing the mixture through a coarse sieve. In the process of stirring, 1% salt and 5% peanut oil were added to the membrane-free roe, which was then filled into cans about 235 g. (8 5/16 oz.) in each, and processed for 75 min. at 115°C. (239°F.). After 3 and 7 months' storage at room temperature a taste panel found the product very good.

An antioxidant (a butylated hydroxyanisole composition), 0.05%, was added to one of the samples to counteract any possible rancidity, but no difference was found between the samples with or without antioxidant.

Samples to which had been added 0.2% monosodium glutamate were perhaps superior in the tasting tests after longer storage.

FAO WORLD FISHERIES ABSTRACTS - May/June 1958, p. 39

ABSTRACTOR:
Paul Hansen

(See the accompanying example of how set up on page)

<p>1. The first of these is the fact that the number of people who are employed in the service of the State is increasing rapidly. This is due to the fact that the State is becoming more and more centralized, and the number of people who are employed in the service of the State is increasing rapidly.</p> <p>2. The second of these is the fact that the number of people who are employed in the service of the State is increasing rapidly. This is due to the fact that the State is becoming more and more centralized, and the number of people who are employed in the service of the State is increasing rapidly.</p>
<p>3. The third of these is the fact that the number of people who are employed in the service of the State is increasing rapidly. This is due to the fact that the State is becoming more and more centralized, and the number of people who are employed in the service of the State is increasing rapidly.</p> <p>4. The fourth of these is the fact that the number of people who are employed in the service of the State is increasing rapidly. This is due to the fact that the State is becoming more and more centralized, and the number of people who are employed in the service of the State is increasing rapidly.</p>
<p>5. The fifth of these is the fact that the number of people who are employed in the service of the State is increasing rapidly. This is due to the fact that the State is becoming more and more centralized, and the number of people who are employed in the service of the State is increasing rapidly.</p> <p>6. The sixth of these is the fact that the number of people who are employed in the service of the State is increasing rapidly. This is due to the fact that the State is becoming more and more centralized, and the number of people who are employed in the service of the State is increasing rapidly.</p>

The following list of abstract periodicals published in English from other countries than the U. S. are found in the National Agricultural Library.

ANIMAL BREEDING ABSTRACTS

Commonwealth Agr. Bureaux, Farnham Royal, Bucks, England.

6 times a year; Vol. 30 in 1962.

WEED ABSTRACTS

Commonwealth Agr. Bureaux, Farnham Royal, Bucks, England.

6 times a year; Vol. 11 in 1962.

SOILS AND FERTILIZERS

Commonwealth Bur. of Soils, Rothamsted Expt. Sta., Harpenden, England.

6 times a year; Vol. 25 in 1962.

HERBAGE ABSTRACTS

Commonwealth Agr. Bureaux, Farnham Royal, Bucks, England.

4 times a year; Vol. 32 in 1962.

FIELD CROP ABSTRACTS

Commonwealth Agr. Bureaux, Farnham Royal, Bucks, England.

4 times a year.

PLANT BREEDING ABSTRACTS

Commonwealth Agr. Bureaux, Farnham Royal, Bucks, England.

4 times a year; Vol. 32 in 1962.

HORTICULTURAL ABSTRACTS

Commonwealth Agr. Bureaux, Farnham Royal, Bucks, England.

4 times a year; Vol. 32 in 1962

DAIRY SCIENCE ABSTRACTS

Commonwealth Agr. Bureaux, Farnham Royal, Bucks, England.

12 issues a year; Vol. 24 in 1962.

TROPICAL ABSTRACTS

Royal Tropical Inst., Amsterdam, Netherlands.

12 times a year; Vol. 17 in 1962.

WORLD AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY ABSTRACTS
North Holland Publishing Co., Amsterdam, Holland.

4 times a year; Vol. 2 in 1960.

SUGAR INDUSTRY ABSTRACTS

Tate & Lyle Refineries, Ltd., Keston, Kent, England.

12 times a year; Vol. 24 in 1962.

In addition to the above, several other magazines have regular listings of abstracts.

Example -

SOIL SCIENCE AND PLANT NUTRITION

Soc. of Sci. of Soil and Manure, Tokyo, Japan

The following pages taken from a 1962 edition of "Biological Abstracts" explains and gives examples of the title index used in this magazine.

There are many advantages to this system when a well written, descriptive title is used that contains the key points covered in the article.

INTRODUCTION TO THE BASIC INDEX

The Basic Index

Biological Abstracts has now made BASIC*—a new technique in biological information—available to its users. A year's research at *Biological Abstracts*, and modern computer techniques permit integration of this new way to quickly locate information with our abstracting service to provide improved access to the world's biological research. BASIC provides the considerable advantages of speed and convenience by furnishing an index with every issue of abstracts. Each title appears over six different times under six or more different keywords to provide quick, easy, multiple access to the exact abstracts of interest.

Significant words used by the authors of biological papers to characterize their work are retrieved and arranged mechanically with remarkable speed. These BASIC words are alphabetically positioned to the center of a line that includes several words preceding and following the featured word. Enough surrounding, modifying words thus appear to readily locate pertinent references on the subject being searched. To facilitate the search, non-significant words are omitted from the ordering but not from appearance in the title.

For example, a paper titled "The metabolism of chromosomal ribonucleic acid in *Drosophila* salivary glands and its relation to synthesis of desoxyribonucleic acid" would appear alphabetically under each of the nine keywords: acid, chromosomal, desoxyribonucleic, *Drosophila*, gland, metabolism, ribonucleic, salivary, synthesis. The modifying words would appear on both sides of the keyword for each of the nine listings.

Use

An effective search method is to vertically scan the alphabetically arranged BASIC index. When a significant word is found, glance at the surrounding modifying words for further meaning and content. If interest is confirmed, note the abstract number on the right and refer to the appropriate abstract in the front section.

Preparation of Basic

1. Titles from the abstracts reported are punched on IBM cards.

2. The punched cards are processed sequentially on IBM computers.

3. Each BASIC word (omitting specified non-significant terms stored in the computer's memory) is ordered in turn to the center of a line. The word is alphabetically listed along with as many other words preceding and following it as the line length of 60 characters will permit. A virgule (/) denotes the end of each title.

4. The mechanically selected and arranged information is printed out as copy suitable for offset lithography.

Typographic Variations

Machines printing out copy for BASIC are limited as to type face and in number and variety of characters. Only upper case type is available. There are no Greek letters, subscript or superscript numerals. Only limited symbols and punctuation marks are present. Consequently the following adjustments and substitutions should be noted:

1. Chemical symbols, names of elements, radicals and compounds are written out in full, as in "beta-glucuronidase" for " β -glucuronidase," "sodium chloride" for "NaCl."

2. When superscript or subscript numerals are required, they are preceded and followed by an asterisk, as "10*6*" for "10⁶", or "NH*2*" for "NH₂."

3. Greek letters are spelled out.

4. Substitutions are used for missing symbols:

SYMBOL	INDICATES
/	end of sentence
[]	(), [], or to enclose parenthetical material
;	(period) : (semicolon)
:	(period) : (colon)
?	(period) ? (question)

Ditto marks, quotation marks, equal signs, and apostrophes are omitted.

Editorial Handling of Basic Words

A BASIC word for purposes of machine programming is considered to be a set of characters ending with a space. On this basis, certain terms traditionally written as one compound word can be split into several elements thereby providing multiple informative entries. Full names of diseases, biological terms and chemical compounds appear regularly in the alphabetical word list. A space separating parts of names causes the right-hand portion to be indexed separately. "Pyelo nephritis," for example, would appear alphabetically under "p," while "nephritis" will comprise a second entry under "n." "Cortico sterone" and "testo sterone" would be ordered alphabetically under "c" and "t" and through a separation of elements both would also appear under "sterone." This makes possible certain visible correlations not readily illustrated by other means.

Conversely, to index as a unit names of organisms or terms commonly written as two or more words, a hyphen is used between parts. "Escherichia coli" would thus be written "Escherichia-coli" to prevent the useless separate entry under "coli".

Biological Abstracts' Subjects In Context. First reported as KWIC Index in 1959 by H. P. Luhn, IBM Advanced Systems Development Division, Yorktown Heights, New York.

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The following examples of some of the different types of abstracts found in different journals are given to show how the Bibliography of Agriculture could be improved if abstracts and/or descriptors were used. Some of the examples could be adapted to mechanization.

1475 pp. 256

Example of a short abstract that could be added to the Bibliography of Agriculture to let the reader know what the article contains. It might be possible to use people to do the abstracting other than the highly trained "field of study" abstractors.

FORDE, W. and ISING, F. H. Acacia calcicola, a new species of importance to the ecology of the Australian arid zone. Trans. roy. Soc. S. Aust. 1958, 31, 153-60, illus. Div. Land Res. Reg. Surv., CSIRO, Alice Springs, N. T.

A description is given of A. calcicola, sp. nov., a small tree or tree-like shrub adapted to calcareous soils. Notes on distribution, habit and habitat, and taxonomic keys are also given. The phyllodes are eaten by migrant stock. Branches are broken off to feed cattle.---E.B.O.

1479 pp. 256

Example of a fairly short but more complete type of abstract that could be added to the Bibliography of Agriculture. It would require an abstractor that is highly trained in specified fields of study or a good author's abstract.

1479 VOLGER, L. Die Kultivierung und Neuansaat von Deidesand- und armoorigen Böden, die Beurteilung der Standortverhältnisse.
The cultivation and resowing of sandy heath and mineral-peat soils, and the assessment of habitat conditions. Grünland supplement to Tierrüchter 1959, 8, No. 3, 17-20 [Landwirtschaftskammer Hannover, W. Germany.]

The chemical and physical properties of the sandy heath and mineral-peat soils of the northern part of W. Germany make them among the most difficult to cultivate, especially when the water supply is uncontrolled. Correct liming is important. Before resowing, an intimate knowledge of the soil habitat, especially its pH and water status, is essential and may be derived from phytosociological studies. The presence of specific proportions of certain indicator plants corresponds with specific habitat conditions. In the areas considered, the species indicative of the soil habitat are: Agrostis canina, Hydrocotyle vulgaris, Viola palustris, Comarum palustre, Ranunculus flammula, Carex spp., Galium uliginosum, and Equisetum limosum. An account is given of experience gained from re-sowing on 4 types of peat soils.—D.B.

Example of a fairly complete abstract. Highly desirable in areas where it is hard to obtain a copy of the publication. "could take up too much space in the Bibliography of Agriculture. In most cases the reader would not be interested in obtaining a library copy of the article. It would require an abstractor highly trained in specified fields of study or a good author's abstract.

1416 ALEKSEENKO, L. N. Structure of the sward of perennial herbage plants in pure sowings and in mixtures under conditions of the Leningrad Province, [Russian] Dissertation, Leningrad Agric. Inst. 1958, pp. 19, bibl. 3.

This work was carried out during 1956-8 on an experimental field of the Leningrad Agricultural Institute with species which comprise swards typical of the north-west USSR, namely, Phleum pratense, Festuca pratensis, Dactylis glomerata, Trifolium pratense and Medicago sativa. The following is a summary of the conclusions. The composition of the above-ground mass of the herbage sward varies according to the stage of plant growth. More than 50% of the above-ground mass of grasses occurs at the 0-30 cm. level above the soil surface; in leguminous species at this level, stems and leaves comprise only 30% of the above-ground mass, while in mixtures of grasses and legumes, the amount is 40%. The main weight of stems is concentrated in the lower levels of the sward; that of the grasses decreases rapidly with increased height and that of leguminous species decreases gradually. In normal growth of pure sowings of lucerne, clover and timothy, a large proportion of the leaves occurs at the 50-80 cm. level, but in cocksfoot and fescue mostly at 10-40 cm. In a mixture of timothy with clover or lucerne, 60-65% of all the leaves occurs at 50-80 cm. In mixtures of cocksfoot or fescue with legumes, the leaves are evenly distributed at all levels. Leaf area fluctuates (depending on species and stage of growth) from 3 to 17 m.²/m.² soil. In mixtures, leaf area is greater (10-13 m.²) than in pure sowings (7-07 m.²), and in mixtures where the leaves are evenly distributed throughout the sward levels, leaf area is even greater. The volume of above-ground mass varies, depending on species and stage of growth, from 400 cm.³ to 2400 cm.³/m.² soil. The relative volume does not exceed 1.35%. The most satisfactory structure of the sward on the whole is a mixture of legumes with cocksfoot or fescue. These mixtures give higher yields than mixtures of clover or lucerne with timothy. Yields (3-yr. tests) from a mixture of lucerne and timothy were 11.83 kg./m.², and with cocksfoot, 12.95 kg./m.². Light intensity in the sward profile in mixtures was 15-20% lower, air temperature 0.3-2.5° lower and relative humidity of air 16.8% higher than in the sward of pure sowings. The intensity of transpiration varied during the day from 0.04 to 0.4 g./hr./g. of wet weight, and, according to stage of growth, from 0.063 to 0.247 g./hr./g. crude st. In mixtures, the intensity of transpiration was 13-20% lower than in pure sowings. Intensity of photosynthesis during

the day varied from 2 or 3 mg. CO₂/dm.²/hr. to 12 or 13 mt. CO₂, and, according to stage of growth, from 3 or 3.5 mg. CO₂ to 13 or 13.5 mg. CO₂, being 4.5-18.8% lower in mixtures than in pure sowings. In spite of the lower intensity of photosynthesis in mixtures, their productivity was greater because of their greater leaf area; consequently yields from mixtures were 37% higher than those from pure sowings.--M. H.

1 -- page 716

Example of material that could be adapted to computers. Both descriptors and a short abstract are given. Personnel would be needed that know the subject matter.

Doshchanov, M. B.

AN ATTEMPT TO INVESTIGATE SOIL EROSION UNDER THE MOUNTAIN RELIEF CONDITIONS OF THE UZBEK SSR (Opyt Izucheniya Erozi Pochv v Usloviyakh Gornogo Rel'efa Uzbekskoi SSR). 1962, 7 p. PL-480 Agr.

Order from OTS \$0.50

60-21879

Trans. of Vsesoyuznoe Soveshchanie po Bor'be s Erozi Pochv. (All-Union Conference on Prevention of Soil Erosion) [held] 1955 [Trudy, 1957] v. 6, p. 619-626.

DESCRIPTORS: *Soils, *Erosion, Analysis, Control, Geophysics, Mountains, Plants, Growth, Fertility.

Plots under mixed grasses were second to those of the plow-land plots in respect to the quantity of soil run-off. The sowing of grasses, when compared with the turf covered slopes, does not prove as effective in protecting the soil from erosion. This is especially true during the first years following the sowing. With abundant precipitation the solid run-off from the plowed surface was by 5 to 10 times more than that of the plots under natural vegetation and 5 to 6 times more than those under a grass mixture. The density of the vegetative cover influences considerably the extent of the surface run-off. A plot which was under a 90% vegetative cover, revealed an insignificant quantity of surface run-off and sometimes even a complete absence of it. In all the regions subject to wash-out, an unstable and sharply decreased yielding capacity of the agricultural crops is observed, resulting from the loss of soil fertility due to the wash-out. Observations on the area of the Chatkal experimental station and on the fields of the kolkhoses of the Sukok sel'sovet of the Parkent district of the Tashkent region have established the existence of a strong tendency towards a decrease in the wheat yield (by 30 - 50%) of the washed-out soils, which was not the case on the non-washed-out soils.



2 -- page 716

Example of material that could be adapted to computers. Descriptors only are used. It might be possible to use untrained personnel (non-professional) to prepare the material.

Eckstein, Z.

THE TRENDS OF DEVELOPMENT OF RESEARCH AND APPLICATION OF CHEMICAL PLANT PROTECTION AGENTS IN CHINA (Kierunki Rozwojowe prac Badawczych i Stosowania Chemicznych Srodkow Ochrony Roslin w Chinskiy Republice Ludowej). 21 Oct 60 [17] p. JPRS: 5796.

Order from ODS or SLA \$1.60

60-41559

Trans. of Przemysl Chemiczny (Poland) 1960, v. [16] 39, no. 4, p. 205-210.

DESCRIPTORS: *Plants, Agriculture, *Pest control, Insecticides, Fungicides, Growth, Herbicides.

Example of material that could be adapted to computers. Descriptors and author's abstract are included.

Balandin, A. A., Ferapontov, V. A., and Tolstopyatova, A. A.
CADMIUM OXIDES ABILITY FOR DEHYDROGENATION OF HYDROCARBONS. 1961 11 p.
30 refs.
Order from OTS or SLA \$1.60 61-18597

Trans. of #Akad [emiya] Nauk SSSR. Otdel [eniē] Khim- [icheskih] Nauk.
Izvest [iya] 1960, no. 10, p. 1751-1758.

DESCRIPTORS: *Hydrocarbons, *Dehydrogenation, *Cadmium compounds, *Oxides, Catalysts, Catalysis.

On basis of the multiplet theory the ability of BeO, MgO, ZnO, CdO for dehydrogenation of hydrocarbons was evaluated in advance, showing that AnO and CdO should be catalysts in opposition to BeO and MgO. Dehydrogenation on CdO was experimentally stated for cyclohexane, cyclohexene, piperidine and butylene with CdO reduction, to the metal. (Author)

Operations Research: A Report Bibliography prepared by ASTIA.
AD-269 750, Jan. 1962.

An example of a product adaptable to computers. Descriptors and/or an abstract prepared from the authors by a person trained in special field of study are given.

The following three types are given: Descriptors alone (page 7)--A; abstract alone (page 6)--B; and one with both descriptors and abstract (page 6)--C;

A.

AD-254 802 Div. 15
(26 Apr 61)

Applied Mathematics and Statistics Labs., Stanford U., Calif.
GEOMETRIC AND GAME-THEORETIC APPROACHES TO OPTIMUM ALLOCATION.
by G. Elfving. 17 Feb 61, 13 p. incl. illus.
(Technical rept. no. 68)
(Contract Nonr-22552, Proj. NR-342-022)
Unclassified report

DESCRIPTORS: Design, Theory, *Games theory, Geometry, *Applied mathematics.

B.

AD-72 772

Accession No.

Applied Mathematics and Statistics Lab., Stanford U., Calif.
MULTI-STAGE STATISTICAL DECISION PROCEDURES, by M. A. Girshick, S. Karlin,
and H. L. Royden.

1 Sep 55, 28 p. (Technical rept. no. 30)

(Contract N6onr-25140)

Unclassified report

An analysis is made of the problem of prescribing rules which state how single-stage decision procedures should interlock with one another in order to provide a minimal complete class of decision procedures for the multi-state statistical decision problem. A general class of games of this type is described, and theorems are presented regarding complete and admissible classes.

C.

AD-243 977 Div. 15
(13 Oct 60)

Applied Mathematics and Statistics Labs., Stanford U., Calif.
GAME THEORETIC PROOF THAT CHEBYSHEV INEQUALITIES ARE SHARP, by Albert W.
Marshall and Ingram Olkin. 20 Sep 60, 15 p.
(Technical rept. no. 36) (In cooperation with Minnesota U.)
(Contract Nonr-22521, Proj. NR-042-993) Unclassified report

Descriptors: Inequalities*; Games theory*; Matrix algebra; Statistical distributions.

Consideration is given to showing that Chebyshev inequalities obtained by the standard method are sharp. The proof is based on relating the bound to the solution of a game. An optimum strategy yields a portion of the extremal distribution, and the remainder is obtained as a solution of the relevant moment problem. (Author)

COULD THE BIBLIOGRAPHY OF AGRICULTURE
BE IMPROVED FOR THE WORKER IN
SOIL AND WATER CONSERVATION?

The value of the B. of A. as a source of access to the literature in the National Agricultural Library was discussed with several scientists in the ARS and SCS.

As a whole, most of the scientists working on a subject classification that is covered in the arrangement of the B. of A. (soils) were well satisfied with the annual edition of the B. of A. with the subject matter index. They did find it annoying and time-consuming to find the needed articles in the monthly issues.

The extensive literature on Soil and Water Conservation did not develop until after the format of the B. of A. was set up. Articles on the subject are now scattered throughout the major sections of the B. of A. This makes it very difficult to obtain the current literature reference as it necessitates reading almost the whole book. Many important papers are not listed because they do not fall within the major listed categories. The study of the B. of A. revealed that only about one-fourth of the periodicals received by the B. of A. Section are now indexed. This is quite serious as most scientists think they have fully covered the field from the B. of A. and do not make additional searches for the literature not indexed in B. of A. Only a small percent of the papers on Hydrology are now listed in the B. of A. There are several agencies working on Hydrology

and a Bibliography on just the Hydrology Section alone would be very valuable to members of the USDA and others interested in Soil and Water Conservation.

Most of the Agencies of the USDA are now interested directly or indirectly in Soil and Water Conservation. It has been suggested that with automation, it would be easy to put out special bibliographies. If so, one on Soil and Water Conservation would be very useful. As an example of some subjects covered in the field of Soil and Water Conservation, a Table of Contents from the ABSTRACTS of Recent Published Material on Soil and Water Conservation is included. At the present time, the B. of A. gives little coverage to some of the items included, like Hydrology and Wildlife.

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SERIAL TRANSIT STUDY OF PIECES RECEIVED IN CATALOG
AND RECORDS IN PERIOD Nov. 1-30, 1962

List of Statistical Tables and Charts

Publication Frequency

Table T 1 Publication Frequency

Currency of Material

Table T 2 Average Time Lag from Date of Publication to Date Received

Table T 3 Time Lag, by Weeks Through 52 Weeks, and by 4-Week Periods
 Through 100 Weeks

Fig. T 4 Percentages of Pieces with Time Lag by Weeks

Volume Flow

Fig. T 5 Volume Flow

Daily Work Flow

Table T 6 Order of Processing in Current Serial Records

Table T 7 Received in Current Serial Records

Fig. T 8 " " " "

Table T 9 Received in Index and Documentation

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Table T 11 Received in Lending

Fig. T 12 " "

Lapse Time

Table T 13 Detail by Days or Weeks:

Catalog and Records, Page 1 and 2
Index and Documentation, Page 3 and 4
From Catalog and Records to Lending, Page 5

Fig. T 14-16 Comparison of Mode, Median, and Mean, arranged as in Table 13

Table T 17 Lapse Days for Percentages not yet Processed: for 1, 10, 25, 50,
 and 75 Percent, Arranged as in Table 13

SERIAL TRANSIT STUDY
OF
PIECES RECEIVED IN CATALOG AND RECORDS (CSR)
IN PERIOD November 1-30, 1962

A time study was made of the movement of serials from the time the issues were received at the Current Serial Records mail desk in the Division of Catalog and Records until they were received in Lending and subsequently made available to Borrowers. The material received in CSR from November 1-30, was used in the study.

The main purpose of the study was to find out how long after cataloged serials are received in the library are they made available to the borrower. The survey provided other statistics such as publication frequency, currency of material received, and daily work Flow that are also important to planning for automated processing in CSR.

A prenumbered "serial transit slip" was attached to each piece received in CSR. If the serial was recorded this slip was not removed until the piece was received in Lending, however long it might take. The date that the piece was received in CSR was stamped on the first line, the publication date entered on the second line, and subsequent dates were added to the slip at each of the 10 possible processing stations. The slip is reproduced below.

SERIAL TRANSIT SLIP NO. _____
DATES: _____

1. Received CSR _____
2. Publication Date _____
3. Recorded in CSR _____
4. Sent to Acq. _____
5. Received in Cat. _____
6. Received in Prep. _____
7. Received in I&D. _____
8. Indexed _____
9. Typed _____
10. Proofread _____
11. Received Lending _____
12. Received Reference _____

From this study the following statistics have been derived:

1. Publication frequency.
2. Currency of material - time lag from publication date to the date received in the library.
3. Volume Flow - The number of pieces and the path taken through the various work stations, beginning with the pieces received in Current Serial Records and ending with the receipt of the piece in Lending, subsequently to be available to the Borrower.
4. Daily work flow - Record of issues received in Division of Catalog and Records, in the Division of Indexing and Documentation and in the Division of Lending as a measurement of daily flow; the order of processing in CSR.
5. Lapse time - Lapse-time at various work stations, or between stations. Work Stations are identified in Figure T 5.

1. Frequency of Publication

Of the 11,202 publications that were received in the survey month and subsequently recorded (pieces discarded were excluded) there were 10,397 that were published in 1962, 445 published in 1961 and 248 published in 1958 to 1960. Pieces dated prior to 1958 are not considered current and were eliminated from the survey.

The issues published in 1962 consisted of 9 percent with a frequency of a year or more (year only shown on the publication), 50 percent with a frequency of a month or more but less than a year (the month was shown as the date) and 41 percent that was less frequent than a month (day was shown on the publication). The detail by months in 1962 is shown in Table T 1.

2. Currency of Material

The 4,274 pieces published in 1962 with a frequency less than monthly had an average lag of 24 days measured from the publication date to the day the issue was received from the mail room. The 5,210 monthly pieces had an average lag of 61 days and together the two groups averaged 44 days lag see Table T 2.

Table T 3 is a detailed analysis showing the pieces and the percents for each 7-day lag period for 52 periods, and thereafter for 4-week periods through 100 weeks. Fig. T 4 shows the percentages of the pieces

Material Received in Catalog and Records Division, NAL

Analysis based on publication date of pieces that were received in Current Serial Records Section during Nov. 1962 and subsequently recorded 1/

Publication Frequency

Date Published	Number of Pieces by Publication Frequency			
	Total	Less than a Month (Day shown on Pub)	Month or More but Less Than Year (Month shown on Pub)	Year or More (Year only shown on Pub)
	Pieces	Pieces	Pieces	Pieces
<u>2/</u> 1958-1960	248	3	99	146
1961	445	74	168	203
1962 or later	900	(Year only)		900 (Year only)
Jan.	33	12	21	
Feb.	50	17	33	
Mar.	67	15	52	
Apr.	59	19	40	
May	111	22	89	
June	195	27	168	
July	211	22	189	
Aug.	396	59	337	
Sep.	1,238	260	978	
Oct.	3,139	1,488	1,651	
Nov.	3,627	2,139	1,488	
Postdated: Nov. <u>3/</u>	177	177	-	
Dec.	179	17	162	
Postdated 1963	15	-	2	13
Total 1962 or later	10,397	4,274	5,210	913
	100%	51.1%	50.1%	8.8%
Grand Total	11,090	4,351	5,477	1,262
	100%	39.2%	49.4%	11.4%

1/ Pieces that were discarded have been excluded.

2/ Records for material published prior to 1958 had been moved to the historic file and are not included in this survey of current serial records.

3/ Date received earlier than date published.

Currency of Material

Received and Recorded in Current Serial Records

Year Published	Average Lag from Date of Publication to Date of Receipt			
	Pieces Recorded	Average Lag		
		Days	Weeks	Years
Year Published:				
1958-60				
1958	54			
1959	78			
1960	<u>116</u>			
Total	248			<u>2.0</u>
1961				
Less than monthly <u>1</u> /	74		61	
Monthly <u>2</u> /	168		65	
Annual <u>3</u> /	<u>203</u>		<u>70</u>	
Total	445		67	
1962				
Less than monthly <u>1</u> /	4274	23.6		
Monthly <u>2</u> /	<u>5210</u>	<u>61.0</u>		
Total	9424	44.2		
Annual <u>3</u> /	913			

Publication Frequency:

- 1/ Less than a month (Day shown on pub)
2/ Month or more but less than a year (Month shown on pub)
3/ Year or more (Year only shown on pub). July 1 assumed as pub date for 1961 annuals but no assumption made for 1962 and the time lag has been omitted for 1962 annuals.

Currency of Material Received in Current Serial Records of
the Catalog and Records Division in Period November 1-30 1962

Time Lag from Date of Publication to Date Received

Time Lag		Pieces Received and Recorded Publication Frequency				Percent of Total Pieces	
		Year 3/ Pieces	Month 2/ Pieces	Less than month 1/ Pieces	Total Pieces	Each Week Percent	Cumulated Percent
1963		13	2	—	15		
Dec. 1962		—	162	17	179		
Nov. 1962		—	—	177	177		
Subtotal					371	3.31	100.00
Days	Weeks						
1-7	1	4/ 179	315	1514	2008	17.93	96.69
8-14	2	74	286	468	828	7.39	78.76
15-21	3	104	318	747	1169	10.44	71.37
22-28	4	85	418	452	955	8.52	60.93
29-35	5	79	519	289	887	7.92	52.41
36-42	6	48	321	171	540	4.82	44.49
43-49	7	50	404	108	562	5.02	39.67
50-56	8	41	369	49	459	4.10	34.65
57-63	9	39	343	48	430	3.84	30.55
64-70	10	30	276	30	336	3.00	26.71
71-77	11	25	225	28	278	2.48	23.71
78-84	12	17	152	20	189	1.69	21.23
85-91	13	18	171	12	201	1.79	19.54
92-98	14	11	105	7	123	1.10	17.75
99-105	15	9	80	10	99	.88	16.65
106-112	16	8	73	5	86	.77	15.77
113-119	17	4	39	5	48	.43	15.00
120-126	18	8	76	5	89	.79	14.57
127-133	19	5	44	7	56	.50	13.78
134-140	20	5	39	6	50	.45	13.28
141-147	21	3	24	7	34	.30	12.83
148-154	22	6	54	2	62	.55	12.53
155-161	23	6	59	3	68	.61	11.98
162-168	24	5	42	6	53	.47	11.37
169-175	25	3	27	3	33	.29	10.90
176-182	26	4	27	9	40	.36	10.61
183-189	27	3	25	3	31	.28	10.25
190-196	28	1	7	8	16	.14	9.97
197-203	29	2	16	6	24	.21	9.83
204-210	30	4	35	3	42	.37	9.62
211-217	31	2	18	3	23	.20	9.25
218-224	32	2	15	5	22	.20	9.05
225-231	33	1	9	4	14	.12	8.85
232-238	34	1	6	3	10	.10	8.73
239-245	35	—	3	2	5	.04	8.63

Currency of Material (Continued)

Time Lag from Date of Publication to Date Received

Time Lag		Pieces Received and Recorded Publication Frequency				Percent of Total Pieces	
		Year 3/ Pieces	Month 2/ Pieces	Less than month 1/ Pieces	Total Pieces	Each Week Percent	Cumulated Percent
Days	Weeks						
246-252	36	2	15	4	21	.19	8.59
253-259	37	1	13	2	16	.14	8.26
260-266	38	1	8	7	16	.14	8.26
267-273	39	2	15	2	19	.17	8.12
274-280	40	2	13	3	18	.16	7.95
281-287	41	1	6	4	11	.10	7.79
288-294	42	1	5	5	11	.10	7.69
295-301	43	1	6	4	11	.10	7.59
302-308	44	1	9	3	13	.12	7.49
309-315	45	-	4	-	4	.03	7.37
316-322	46	1	7	2	10	.10	7.34
323-329	47	-	2	1	3	.03	7.24
330-336	48	3	32	2	37	.33	7.21
337-343	49	-	-	2	2	.02	6.88
344-350	50	-	-	-	-	-	6.86
351-357	51	-	-	2	2	.02	6.86
358-364	52	2	2	1	24	.21	6.84
53-56	5/	11	-	10	21	.19	6.63
57-60		42	28	9	79	.70	6.44
61-64		30	19	8	57	.51	5.74
65-68		16	6	8	30	.27	5.23
69-72		25	12	10	47	.42	4.96
73-76		24	15	6	45	.40	4.54
77-80		17	8	7	32	.29	4.14
81-84		12	8	3	23	.20	3.85
85-88		10	9	-	19	.17	3.65
89-92		-	-	-	-	-	3.48
93-96		15	13	-	28	.25	3.48
97-100		1	-	1	2	.02	3.23
2 years or more		170	181	9	360	3.21	3.21
Total		1,286	5,559	4,357	11,202	100.00	

Publication Frequency:

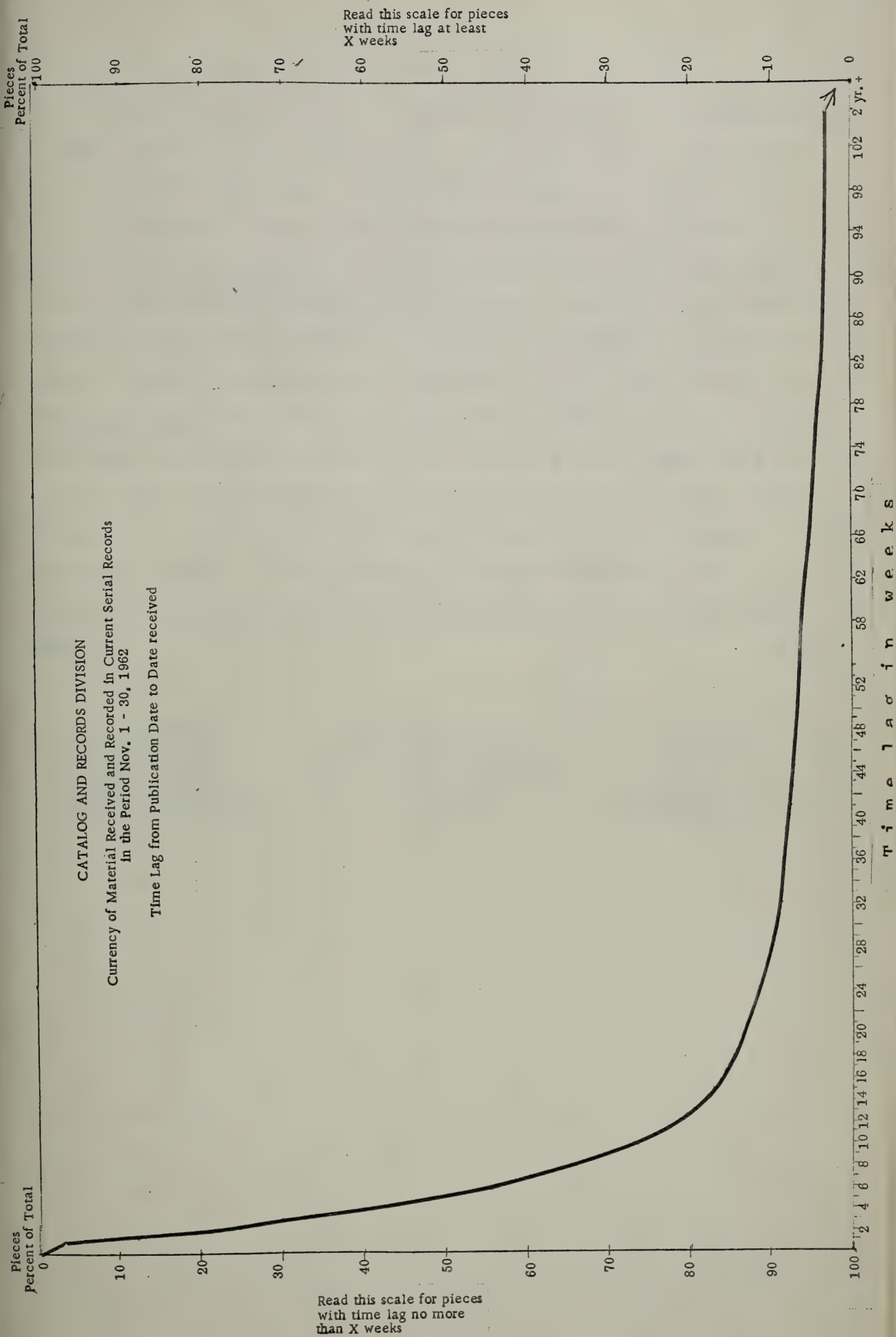
1/ Less than a month (Day shown on pub)

2/ Month or more but less than a year (Month shown on pub)

3/ Year or more (Year only shown on pub)

4/ Time lag could not be computed for pieces which did not show month of publication. There were 900 pieces dated 1962 which were prorated according to lag shown for other 1962 pieces.

5/ There were 203 pieces dated 1961 which were prorated according to lag shown for other 1961 pieces.



with time lag by weeks. The lag rate declined in a steep linear fashion for the first 9 weeks; from 9 to 15 weeks the decline is moderate and at 15 weeks levels off to a slow decline. Only 10 percent of the pieces are included in those with a lag of from 27 weeks to 2 years.

The frequency series of the number of pieces with reference to the lag time has been cumulated in two different ways. These are shown in Fig. T 4 and in brief form in the table below. From the left scale with the number of pieces cumulated downward may be determined readily the number of pieces (expressed as a percentage of the total) with a time lag no more than the given lag. Cumulating upward, the right hand scale interprets the number of pieces with a time lag of at least the given lag.

From the table below it can be seen that of the material recorded, 20 percent is received within at least 2 weeks from the publication date, 40 percent within at least 4 weeks, 60 percent within at least 7 weeks, 80 percent within at least 12 weeks, and 90 percent within at least 27 weeks.

Pieces with Time Lag of No More Than The Given Weeks	Time Lag From Publication Date to Date Received In the Library	Pieces With Time Lag of At Least The Given Weeks
<u>Percent of Total</u>	<u>Weeks</u>	<u>Percent of total</u>
10	1-1/2	90
20	2	80
30	3	70
40	4	60
50	5-1/4	50
60	7	40
70	9	30
80	12-1/2	20
90	27	10
95	66	5

WORK FLOW GENERAL

There were 24,651 pieces received in Current Serial Records during the survey period from November 1-30, 1962.

When the survey started on November 1 there were 5,266 pieces that had been received prior to November 1 that had not yet been processed in CSR except for the initial sort. The initial sort is on the first letter of the alphabet, and the pieces are then transferred to shelves to await action by the checkers. These pieces that were in process on November 1 are not included in the survey except to be identified in the daily work Flow tables and charts for Index and Documentation (Table T 9 Figure T 10), and for Lending (Table T 11, and Figure T 12). These statistics were derived from a count made of pieces received with slips which represent pieces received during the survey month of November 1962, and of pieces that did not have slips which represent material received either before or after the survey month. In the processing taking place in CSR there was no one point in which comparable counts could be taken for material received before or during the survey period, therefore Figure T 8 shows only daily receipts at the mail desk during the survey month.

3. Volume Flow

Figure T 5 shows volume Flow of pieces received in the survey period starting with the receipt in CSR described as Station (1) and identifies the volume and processing path taken by the pieces as they traveled through the various work stations.

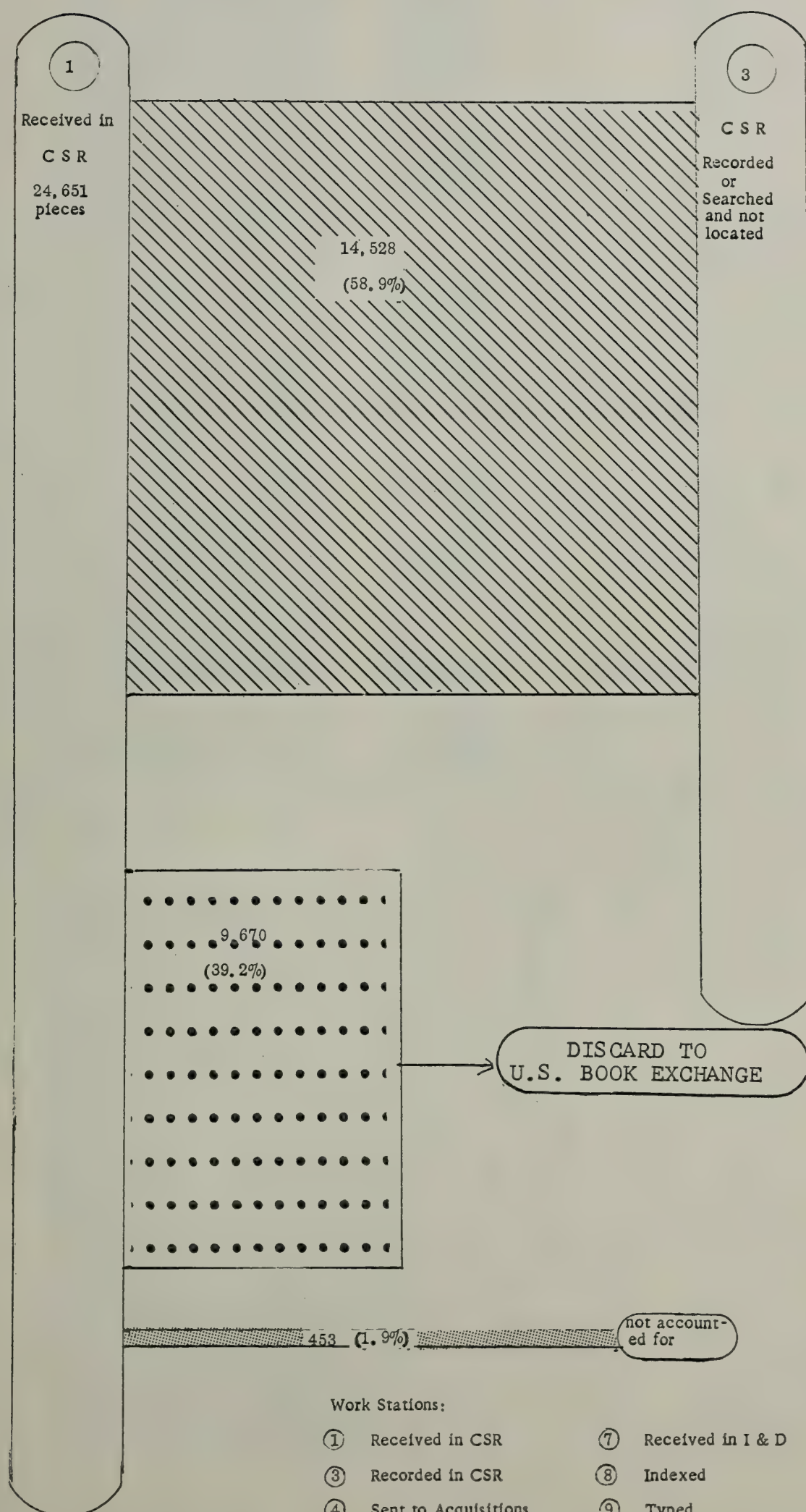
The greatest volume of pieces went through Station (3) Recorded in CSR, through Station (7) Received in Index and Documentation, and ended at Station (11) Received in Lending subsequently to becoming available to the Borrower. About 2/3 of the pieces that went through Station (7) were not acted upon (indexed for the Bibliography) and in general took one to two days to get to Lending.

A smaller volume, requiring more detailed action in Catalog and Records, took various paths of great variety between (3) and (7) and consumed the most time.

VOLUME FLOW

Page 1

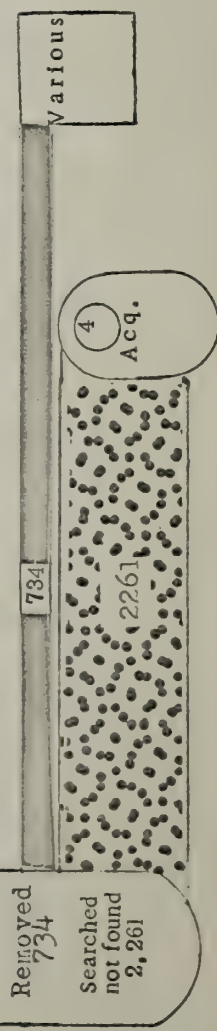
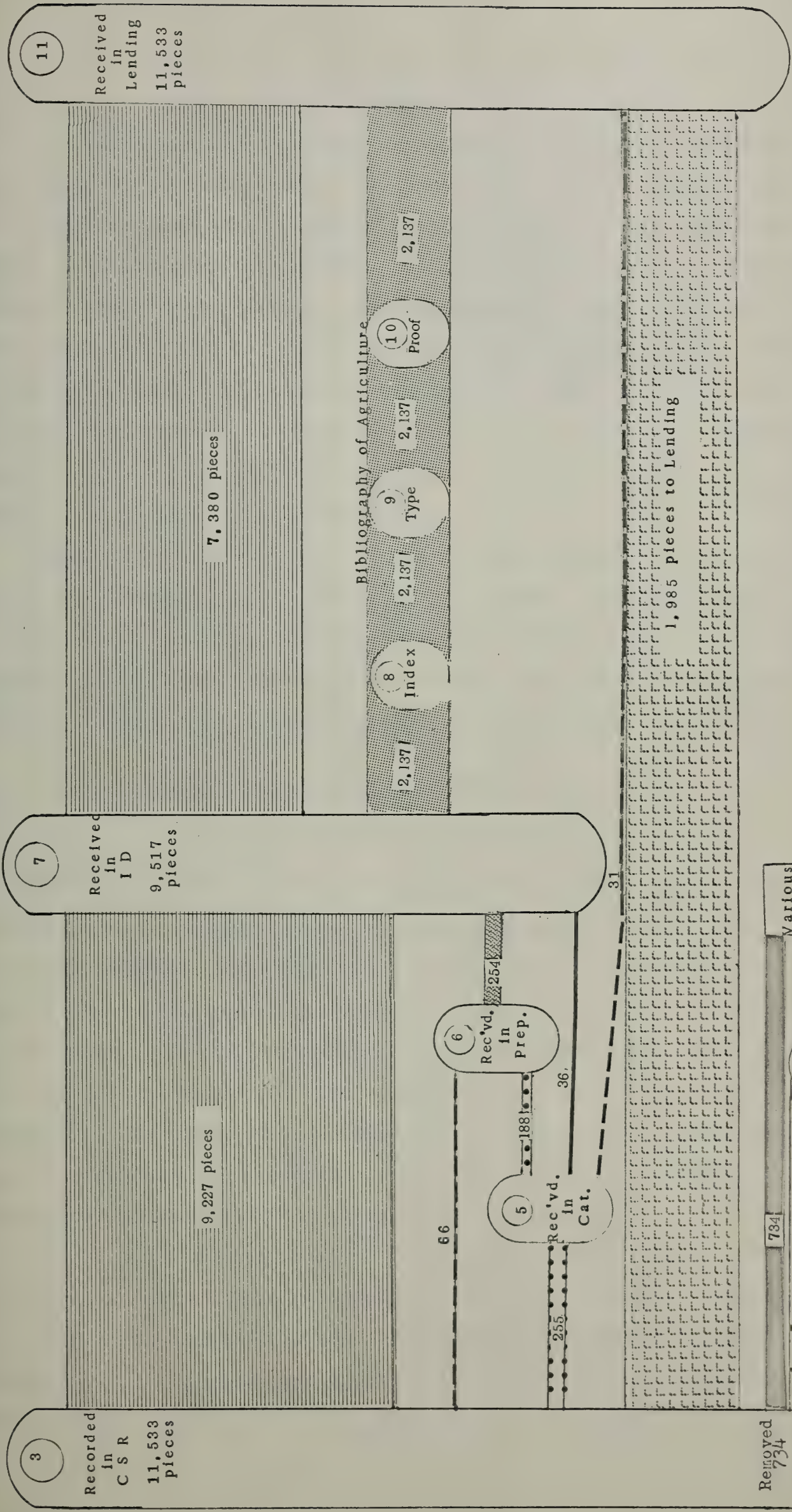
For PIECES RECEIVED IN C S R Nov. 1-30, 1962



Work Stations:

- | | |
|----------------------------|-----------------------|
| ① Received in CSR | ⑦ Received in I & D |
| ③ Recorded in CSR | ⑧ Indexed |
| ④ Sent to Acquisitions | ⑨ Typed |
| ⑤ Received in Catalog | ⑩ Proofread |
| ⑥ Received in Preparations | ⑪ Received in Lending |

FOR PIECES RECEIVED IN CSR NOV. 1 - 30, 1962



Thirty-nine percent of the pieces received in CSR during the survey month went no farther in the NAL System but were discarded to the U.S. Book Exchange. This percentage was as high as 50 percent according to the annual 1961-62 statistics. A large volume of the unwanted publications are received as a result of such conditions as the following, over which the Library has no control: publications discarded from Department offices, out of date mailing lists, promotional copies of serials. However the checker had to search each title in his checking file before it was determined that the piece was not to be kept in this library. It is noted that many of the discards are multiple copies of publications received at one time, so that the number of pieces received does not reflect the number of titles searched.

There were 11,533 (or 47% of the pieces received) that were recorded in the CSR checking file; 2,261 (9%) titles were searched, and not found and sent to Acquisitions for selection; and 734 (3%) were removed because they did not fit the purpose of the survey which was to measure the time required to make periodicals available to the public.

4. Daily Work Flow

Order of Processing in CSR

Table T 6 shows the date the pieces were recorded for each day's receipts during November 1962. It should be noted that the total number of pieces recorded for a particular day as shown in the table relates only to the 11,527 pieces received in November (invalid dates omitted in the count). At the beginning of the month there were 5,266 pieces received before November 1 that were also to be processed during November. (The count of 5,266 includes an undetermined number that would be searched and discarded rather than recorded. Based on other statistics, probably half of these would be recorded)

Of the 6,191 pieces received the first half of November only 442 or 7 percent had not been recorded at the end of November. However this represents almost a months delay for the 128 pieces received November 1-5. A significant question is "How many pieces that are unduly delayed before recording are dailies or weeklies?"

ORDER OF PROCESSING IN CURRENT SERIAL RECORDS

Pieces Received in Nov. 1962 and Recorded

(3) Date Pieces Recorded in CSR			(1) Date Pieces Received in CSR - November 1962									
			1	2	5	6	7	8	9	13	14	15
Nov.	1	.....	7									
	2	.....	19	10								
	5	.....	14	38	-							
	6	.....	42	151	19	60						
	7	.....	36	92	74	45	4					
	8	.....	35	94	55	31	66	1				
	9	.....	32	71	100	34	38	57	12			
	13	.....	22	103	71	53	104	5	35	8		
	14	.....	32	122	81	60	162	11	39	74	4	
	15	.....	33	92	68	14	87	12	41	77	61	-
	16	.....	25	94	55	36	110	6	33	76	111	2
	19	.....	28	46	64	21	92	1	25	38	123	43
	20	.....	8	32	8	14	45	7	33	65	181	40
	21	.....	10	20	21	16	75	8	22	61	130	48
	23	.....	10	14	9	10	24	1	25	41	92	64
	26	.....	1	7	1	3	7	1	14	26	75	24
	27	.....	8	14	14	8	29	8	13	33	66	47
	28	.....	3	11	10	10	37	1	24	23	116	29
	29	.....	7	4	5	2	13	5	12	13	54	21
	30	.....	5	1	3	2	8	-	3	13	25	18
Dec.	3	.....	-	3	3	-	-	-	1	3	17	15
	4	.....	-	9	6	1	-	-	-	4	13	23
	5	.....	-	4	1	1	1	-	1	4	28	10
	6	.....	1	4	-	-	1	3	6	5	8	9
	7	.....	-	1	3	-	3	2	-	1	6	2
	10	.....	5	3	10	2	3	7	4	-	4	4
	11	.....	1	4	3	-	1	-	1	6	4	4
	12	.....	-	2	-	-	-	-	-	-	1	-
	13	.....	1	3	1	-	1	-	-	1	9	6
	14	.....	-	2	-	1	1	-	1	4	-	-
Dec.	17 - 31	.....	-	18	17	1	25	-	-	2	5	22
Jan.	2 - 30	.....	1	11	7	2	9	-	-	3	4	4
Feb.	4 - May 16	..	-	3	1	-	1	-	-	2	1	1
Total	.....		386	1083	710	427	947	136	345	583	1138	436
Pieces not yet Recorded at the end of Nov.....			9	67	52	8	46	12	14	35	100	100
Number Percent of total			0.3	1.9	1.5	0.2	1.3	0.3	0.4	1.0	2.9	2.9

ORDER OF PROCESSING IN CURRENT SERIAL RECORDS (Cont.)

Pieces Received in Nov. 1962 and Recorded

(3)		(1) Date Pieces Received in CSR - November 1962										Total ^{1/}	
Date	Pieces Recorded in CSR	16	19	20	21	23	26	27	28	29	30		
Nov.	1	.....										7
	2	.....										29
	5	.....										52
	6	.....										272
	7	.....										251
	8	.....										282
	9	.....										344
	13	.....										401
	14	.....										585
	15	.....										485
	16	.....	-									548
	19	.....	120	1								602
	20	.....	12	8	2							455
	21	.....	22	30	37	2						502
	23	.....	23	20	63	7	7					410
	26	.....	12	22	44	57	127	10				431
	27	.....	20	36	65	27	24	26	-			438
	28	.....	26	42	113	38	44	172	2	6		707
	29	.....	7	16	82	39	39	132	29	65	28	573
	30	.....	27	28	60	42	14	104	5	27	31	434
Dec.	3	.....	8	41	81	40	42	122	13	46	29	522
	4	.....	14	30	89	41	59	221	32	80	99	794
	5	.....	13	13	44	27	41	179	24	96	145	719
	6	.....	13	9	22	17	23	106	18	41	107	461
	7	.....	1	1	24	9	9	38	1	20	20	150
	10	.....	3	13	13	9	9	26	14	23	48	220
	11	.....	-	-	12	3	8	13	-	11	25	101
	12	.....	-	-	20	33	4	16	1	3	10	100
	13	.....	-	-	6	16	1	7	2	8	17	95
	14	.....	-	-	3	-	4	3	-	5	-	31
Dec.	17-31	...	10	2	6	7	4	3	1	2	26	152	
Jan.	2-30	.....	1	2	6	2	7	10	-	2	9	82
Feb.	4-May 16		3	-	4	-	2	-	-	1	-	19	
Total		335	314	796	416	468	1188	142	436	594	374	11,254

Pieces not yet

Recorded at the
end of Nov..

66 111 330 204 213 744 106 338 535 356 3446

Number

Percent of total 19 3.2 9.6 5.9 6.2 21.7 3.1 9.8 15.6 10.3 100

^{1/} This is not the total number recorded daily in CSR as pieces waiting to be recorded on Nov. 1 are not included.

Daily Work Flow in CSR

Table T 7 shows the number of pieces received in CSR (including pieces later discarded from the NAL System), the date received and the date sorted. An average of 1200 pieces per working day were received in November 1962. This ranged from a low of 297 to a high of 2378. Receipts were from 600-900 pieces per day about 40% of the time (8 days) and over 1500 about 35 percent of the time (7 days). There were two holidays in November and 3 of the peak loads followed the holidays. No significant load pattern for certain days of the week is shown for November. However heavy days' receipts required as much as 3 days for the "first sort" of one day's receipts and staff were borrowed from the activity of the finer sort, searching and recording.

A question raised "is when staff is borrowed from search and recording are dailies and weeklies given priority by staff who continue to search and record?"

Table T 9 and Figure T 10 show the number of pieces received daily in Index and Documentation for a 2-month period. The solid black line on the chart identifies pieces that were received in CSR during the survey month. The broken line represents pieces received either before or after the survey month. Only about 1/4 of this volume that goes through I&D, is indexed for the Bibliography of Agriculture. If pieces not stopping at I&D were identified when recorded in CSR and sent directly to Lending a more efficient operation would be possible. A delay of one or two days could be avoided and for weeklies this is significant. As the chart shows the work flow is fairly even, ranging from 213 to 764 with the exception of one peak day with 1115 pieces. About half of the time there were 400 pieces received each day.

Table T 11 and Figure T 12 show the number received daily in Lending. These include the material coming directly to Lending from CSR, but most of the pieces traveled through I&D -- see Volume Flow Figure T 5. The count in Lending identified pieces with the property stamp date after the survey month of November. Therefore in Figure T 12, the black solid line identifies material received in CSR November 1-30, and the broken line below the arrow identifies pieces received before November, while above the arrow shows pieces received after November.

DAILY WORK FLOW
IN
CURRENT SERIAL RECORDS

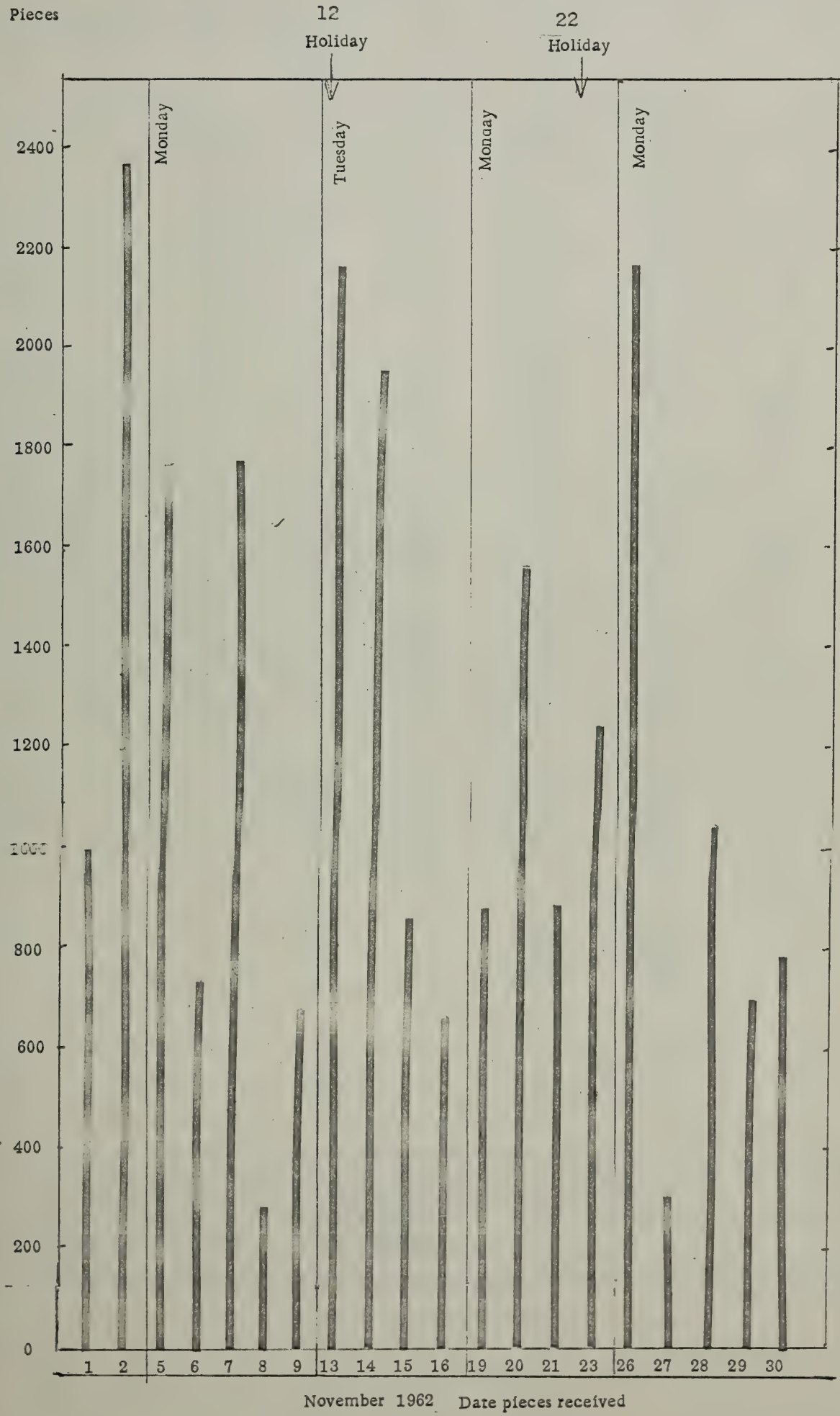
Pieces Received Nov. 1-30, 1962

Total Received in CSR 1/

Date Received			Date Sorted	Number Received
Nov.	1	Thurs.	Nov. 1-2	999
	2	Fri.	2-5	2378
	5	Mon.	5-6	1756
	6	Tues.	6	728
	7	Wed.	7-8	1769
	8	Thurs.	8	286
	9	Fri.	9	675
	12	-H-		
	13	Tues.	13-14	2159
	14	Wed.	14-16	1939
	15	Thurs.	16-19	856
	16	Fri.	19	664
	19	Mon.	19-20	880
	20	Tues.	20-21	1574
	21	Wed.	21-23	888
	22	-H-		
	23	Fri.	23-26	1253
	26	Mon.	26-28	2181
	27	Tues.	28	297
	28	Wed.	28	1041
	29	Thurs.	29	684
	30	Fri.	30 - Dec. 3	786
Total				24,793
Number Assigned in error				142
Net Total Received				24,651

1/ This count taken when initial sort on the first letter of the alphabet was made. There were 39 percent of the pieces discarded later, including multiple copies not kept or required copies had already been received, or instructions from Division of Acquisitions were not to keep this title.

WORK FLOW IN CATALOG AND RECORDS
Pieces Received Daily in CSR, November 1-30, 1962



DAILY WORK FLOW IN INDEXING AND DOCUMENTATION

Pieces Received from CSR 1/ and Pieces Forwarded to Lending
in Period Nov. 1 - Dec. 30, 1962

1962	Total	Pieces Received from CSR 2/				
		Total With Slips	Serials		Books 3/	
			With Slips	Without Slips	With Slips	Without Slips
On hand awaiting indexing on Nov. 1	4670					
Nov. 1	42					42
2	478	4	4	422		52
5	232	18	18	178		36
6	289	66	66	223		0
7	717	226	224	337	2	154
8	629	150	150	479	-	0
9	646	341	333	270	8	35
13	473	246	246	204	-	23
14	485	311	310	120	1	54
15	612	485	483	70	2	57
16	426	313	309	45	4	68
19	551	526	526	25	-	0
20	507	422	410	31	12	54
21	460	382	369	7	13	71
23	482	444	409	34	35	4
26	440	321	310	42	11	77
27	356	331	331	25	-	0
28	527	366	355	72	11	89
29	622	602	552	9	50	11
30	501	483	458	13	25	5
Dec. 3	479	400	374	16	26	63
4	555	514	511	34	3	7
5	1209	1054	1008	88	46	67
6	973	738	737	187	1	48
7	480	452	452	28	-	0
10	283	122	113	98	9	63
11	428	123	123	250	-	55
12	482	147	118	325	29	10
13	545	105	105	440	-	0
14	528	129	113	279	16	120
17	767	43	32	534	11	190
18	282	4	4	278	-	0
19	314	11	4	238	7	65
20	270	19	10	224	9	27
21	181	2	2	179	-	0
26	82	20	18	42	2	20
27	236	3	1	175	2	58
28	164	3	2	150	1	11
31	-	-	-	-	-	-

1/ About 3/4 of the pieces received are forwarded directly to Lending, and 1/4 are indexed for the Bibliography of Agriculture.

2/ Slips were attached to pieces received in Current Serial Records during the survey period Nov. 1-30, 1962.

3/ Separately cataloged volumes; slips were assigned in error to some pieces.

DAILY WORK FLOW IN INDEXING AND DOCUMENTATION (Cont.)

Pieces Received from CSR 1/ and Pieces Forwarded to Lending
in Period Nov. 1 - Dec. 30, 1962

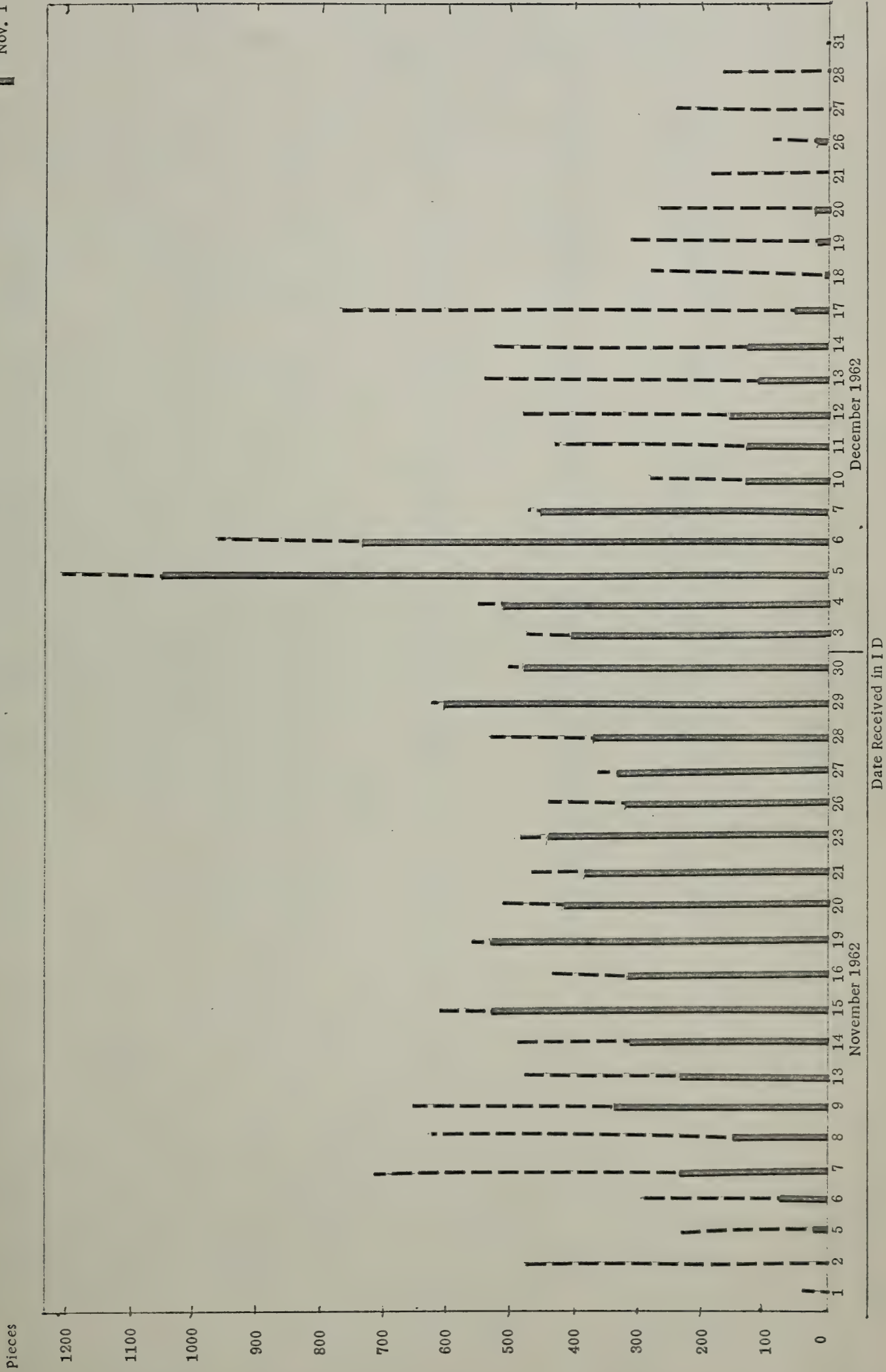
1962		Pieces Forwarded to Lending 2/				
		Total	Serials		Books	
			With Slips	Without Slips	With Slips	Without Slips
Nov.	1	-				-
	2	2				2
	5	359	3	400		56
	6	194	17	177		0
	7	275	43	228		4
	8	502	141	272		88
	9	458	109	348		1
	13	553	315	215		23
	14	362	176	166		20
	15	358	233	86	1	38
	16	426	329	57	1	39
	19	331	257	44		30
	20	414	397	17		0
	21	486	349	98		39
	23	333	235	43	3	52
	26	268	268	0		0
	27	353	209	62	9	73
	28	369	257	107	2	3
	29	647	298	259	5	85
	30	598	443	153	-	2
Dec.	3	619	365	254		0
	4	570	289	239	7	35
	5	458	196	260	1	1
	6	1080	886	164	13	17
	7	607	411	180	2	14
	10	599	432	146	1	20
	11	405	145	210	2	48
	12	499	116	327	2	54
	13	442	150	275	9	8
	14	579	145	430	0	4
	17	322	65	217	2	38
	18	476	40	372	0	64
	19	441	27	410	0	4
	20	405	24	340	3	38
	21	302	31	222	5	44
	26	236	39	177	2	18
	27	201	40	145	0	16
	28	275	47	216	1	11
	31	304	29	242	1	32

1/ About 3/4 of the pieces received are forwarded directly to Lending, and 1/4 are indexed for the Bibliography of Agriculture.

2/ Slips were attached to pieces received in Current Serial Records during the survey period Nov. 1-30, 1962.

--- Pieces Received in CSR
other than Nov. 1962
--- Pieces Received in CSR
Nov. 1 - 30, 1962

WORK FLOW IN INDEX AND DOCUMENTATION (I D)
Pieces Received Daily in I D (forwarded from CSR)



DAILY WORK FLOW IN DIVISION OF LENDING

Pieces Received in Lending from CSR Direct or Through I D

Date Received in Lending		Date Received in CSR			
		Total	Nov. 1962	Other	
		Pieces		Before Nov.	Dec.
		Pieces	Pieces	Pieces	Pieces
Nov.	5	323	6	317	
	6	218	16	202	
	7	469	123	346	
	8	564	209	355	
	9	455	109	346	
	13	584	296	288	
	14	403	225	178	
	15	421	325	96	
	16	435	369	66	
	19	395	353	42	
	20	517	491	26	
	21	460	365	95	
	23	414	343	71	
	26	447	387	60	
	27	376	303	73	
	28	473	331	142	
	29	688	426	262	
	30	757	551	206	
Dec.	3	678	417	261	-
	4	764	404	338	22
	5	743	480	231	32
	6	1115	940	111	14
	7	672	431	41	200
	10	308	109	106	93
	11	636	356	135	145
	12	743	323	140	280
	13	580	188	62	330
	14	698	171	171	356
	17	447	68	4	375
	18	582	46	92	444
	19	428	15	136	277
	20	460	41	89	330
	21	295	34	38	223
	26	274	40	68	166
	27	234	61	38	135
	28	279	30	58	191
	31	264	-	69	195
Total Nov. - Dec.		18,599	9382	5359	3858
Jan. 1 - 31			573		
Feb. 1 - 11			139		
Thru Feb. 11			10,094		
Total Transit Slips			11,533		
Difference - not included in above tabulation			1439		

Pieces Received in CSR
other than Nov. 1962

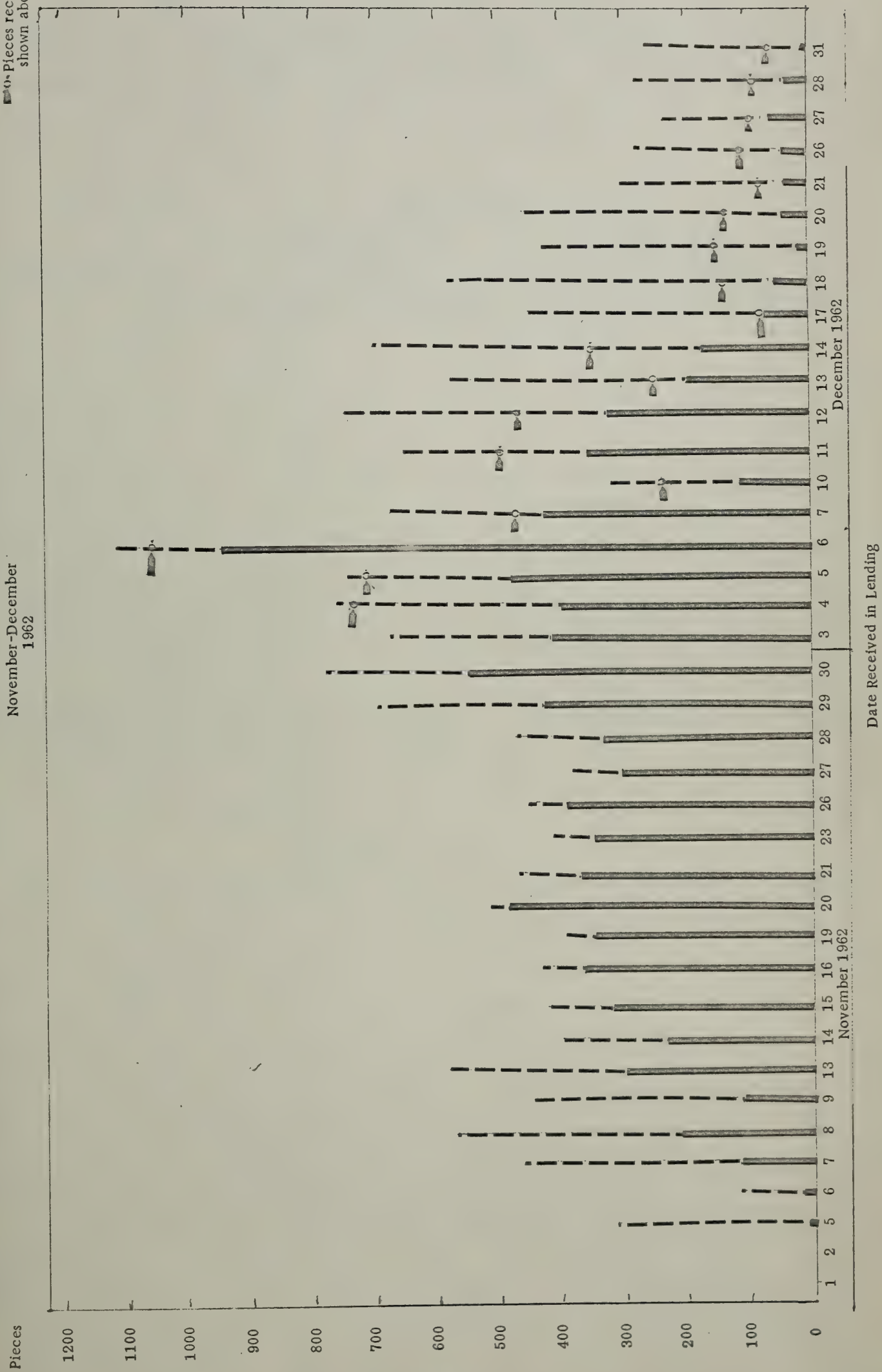
Pieces Received in CSR
Nov. 1 - 30, 1962

Pieces received in Dec.
shown above the 1962.

WORK FLOW IN LENDING

Pieces Received Daily in Lending Through I D or Direct from CSR

November-December
1962



The daily flow is similar to that in I&D with half the days in November showing 400 pieces received. A frequency distribution of number of days showing receipts in 100 piece intervals is shown below. For both I&D and Lending, November shows a normal distribution peaking at 400-499 pieces. However December shows as many days with 200-299 pieces as for 600-699.

Pieces Received Per Day	Number of Work Days			
	Nov. 5-30 1962		Dec. 3-31 1962	
	Received in I&D	Received in Lending	Received in I&D	Received in Lending
1-99	-	-	-	-
100-199	-	-	-	-
200-299	1	1	4	5
300-399	3	3	2	1
400-499	9	10	3	3
500-599	3	3	1	2
600-699	1	1	5	4
700-799	1	1	3	3
1100-1199	-	-	1	1
Total Days ..	18	18	19	19

5. Lapse Time

The lapse time was measured between various work Stations for pieces received in CSR during the survey month. In Table T 13 is shown the number of pieces with lapse time measured between various stations: for each working day from 0 (same day as received) to 20 days; in 5-day periods (one week) for the next 5 to 8 weeks; and in 10-day periods (two weeks) for the next 10 to 32 weeks. The number of pieces that had a lapse time of more than 160 working days is shown in one total. However work sheets are available that show pieces for each 1-day period.

Most significant of these Statistics are the percent of the pieces that have not yet been processed. Table T 13 identifies varying "percentage not yet processed" levels and Table T 17 summarizes this by showing lapse days for 1, 10, 25, 50, and 75 percent not yet processed.

PROCESSING OR TRANSIT TIME
For Pieces Received and Recorded in Current Serial Records
in the Period Nov. 1-30, 1962

Page 1 - Catalog and Records Division

Pieces with Lapse Time Measured Between Stations 1/

LAPSE TIME Work Weeks or Work Days			LAPSE TIME IN CSR								
			Before Pieces Recorded From ① to ③			After Pieces Recorded From ③ to ⑦			Total Lapse Time From ① to ⑦		
			Pieces No.	Percent of total		Pieces No.	Percent of total		Pieces No.	Percent of total	
				Each Day Pct.	Not Yet Process. Pct.		Each Day Pct.	Not Yet Process. Pct.		Each Day Pct.	Not Yet Process. Pct.
1	0	2/	182	1.6	100	546	5.6	100	1	-	100
	1		978	8.7		7926	84.0	10	138	1.5	
	2		1177	10.5		206	2.2		518	5.5	
	3		1144	10.2	75	50	.5		834	8.8	
	4		1273	11.3		41	.4		931	9.8	75
	5		1117	9.9	50	41	.4		1152	12.2	50
	6		1108	9.8		35	.4		1011	10.7	
	7		1003	8.9		39	.4		929	9.8	
	8		762	6.8		95	1.0		777	8.2	
2	9		761	6.8	25	35	.4		684	7.2	25
	10		389	3.5		48	.5		697	7.3	
	11		275	2.4	10	121	1.3		327	3.4	
	12		221	2.0		12	.1		349	3.7	
	13		169	1.5		78	.8		175	1.8	10
	14		162	1.5		4	.0		124	1.3	
3	15		94	.8		34	.4		153	1.6	
	16		50	.4		61	.7	1	108	1.1	
	17		36	.3		3	-		77	.8	
	18		20	.2		3	-		52	.6	
	19		37	.3		2	-		34	.4	
4	20		31	.3		4	-		33	.4	
5	21-25		101	.9		17	.2		173	1.8	
6	26-30		74	.7	1	17	.2		75	.8	
7	31-35		32	.3		1	-		38	.4	1
8	36-40		15	.1		3	-		21	.2	
10	41-50		27	.2		2	-		33	.4	
12	51-60		11	.1		3	-		15	.2	
14	61-70		3	-		5	1		3	-	
16	71-80		2	-		-	-		4	-	
18	81-90		3	-		1	-		6	.1	
20	91-100		-	-					1	-	
22	101-110		4	-					3	-	
24	111-120		-	-					1	-	
26	121-130		-	-						-	
28	131-140		1	-							
30	141-150										
32	151-160										
	More than 160										
Total 4/ Pieces			11,262	100		9433	100	3/	9477	100	
Av: Mode Days			4.00			1.00			5.00		
Median Days			4.78			0.56			6.16		
Mean Days			6.36			1.79			8.05		
Range Days			0 to 131			0 to 83			0 to 111		

1/ Key to Stations:

- ①—Received in CSR
③—Recorded in CSR
④—Sent to Acquisitions
⑤—Received in Catalog
⑥—Received in Preparations

- ⑦—Received in I. D.
⑧—Indexed in I. D.
⑨—Typed
⑩—Proofread
⑪—Received in Lending
⑫—Received in Reference

- 2/ Same as day Received
3/ Excludes 1985 pieces sent direct to Lending
4/ Pieces with invalid dates were omitted

PROCESSING OR TRANSIT TIME
For Pieces Received and Recorded in Current Serial Records
in the Period Nov. 1-30, 1962

Page 2 - Catalog and Records Division (Cont.)

Pieces with Lapse Time Measured Between Stations 1/

LAPSE TIME			Time in Catalog From (5) to (6) or 5 to (7) Skip (6) or 5 Direct to (11)			Time in Preparations From (6) to (7)			Time in Catalog, in Prep. or Both From (3) to (7) thru (5) or (6) or Both		
Work Weeks	or	Work Days	Pieces	Percent of total		Pieces	Percent of total		Pieces	Percent of total	
			No.	Each Day	Not Yet Process.	No.	Each Day	Not Yet Process.	No.	Each Day	Not Yet Process.
				Pct.	Pct.		Pct.	Pct.		Pct.	Pct.
1		0 2/	1	.4	100	1	.5	100	-	-	
		1	20	8.0		13	6.0		3	1.1	100
		2	45	17.9	75	42	19.4	75	4	1.4	
		3	72	28.7	50	43	19.8	50	16	5.7	
		4	39	15.5	25	32	14.8		17	6.1	
		5	24	9.5		18	8.3	25	30	10.7	75
		6	11	4.4		25	11.6		25	9.0	
		7	2	.8		12	5.6		36	12.8	50
		8	10	4.0	10	7	3.2	10	34	12.1	
		9	5	2.0		6	2.8		20	7.2	
2		10	4	1.6		2	.9		27	9.7	25
		11	1	.4		2	.9		13	4.6	
		12	3	1.2		-	-		8	2.9	
		13	1	.4		2	.9		3	1.1	
		14	-	-		3	1.4		8	2.9	
3		15	-	-		1	.5		3	1.1	
		16	1	.4		1	.5		-	-	
		17	3	1.2		-	-		2	.7	10
		18	1	.4		-	-		3	1.1	
		19	-	-		1	.5		1	.4	
4		20	-	-		-	-		3	1.1	
		21-25	2	.8		1	.5		7	2.5	
		26-30	-	-		-	-		3	1.1	
		31-35	1	.4		-	-		1	.4	
		36-40	-	-		-	-		2	.7	
10		41-50	1	.4		1	.5		2	.7	
		51-60	2	.8	1	1	.5	1	3	1.1	
		61-70	2	.8		-	-		-	-	
		71-80	-	-		2	.9		4	1.4	1
		81-90	-	-		-	-		1	.4	
20		91-100	-	-		-	-		-	-	
		101-110	-	-		-	-		-	-	
		111-120	-	-		-	-		-	-	
		121-130	-	-		-	-		-	-	
		131-140	-	-		-	-		-	-	
30		141-150	-	-		-	-		-	-	
		151-160	-	-		-	-		-	-	
Total 4/ Pieces			251	100		216	100		279		
Av: Mode Days			3.00			3.00			7.00		
Median Days			2.83			3.28			7.26		
Mean Days			5.40			5.64			10.78		
Range Days			0 to 69			0 to 75			1 to 83		

1/ Key to Stations:

- (1) — Received in CSR
(3) — Recorded in CSR
(4) — Sent to Acquisitions
(5) — Received in Catalog
(6) — Received in Preparations

- (7) — Received in I. D.
(8) — Indexed in I. D.
(9) — Typed
(10) — Proofread
(11) — Received in Lending
(12) — Received in Reference

2/ Same as day Received

4/ Pieces with invalid dates
were omitted

PROCESSING OR TRANSIT TIME
For Pieces Received and Recorded in Current Serial Records
in the Period Nov. 1-30, 1962

Page 3 - Index and Documentation Division (I D)

Pieces with Lapse Time Measured Between Stations 1/

LASPE TIME			Time in I D for Pieces Indexed From ⑦ - ⑪ thru ⑧			Time in I D for Pieces Not Indexed From ⑦ - ⑪ Skip ⑧		
Work Weeks	or	Work Days	Pieces	Percent of total		Pieces	Percent of total	
			No.	Each Day Pct.	Not Yet Process. Pct.	No.	Each Day Pct.	Not Yet Process. Pct.
1		0 <u>2/</u>	0	-		9	.1	100
		1	4	2	100	6391	87.1	10
		2	11	5		602	8.2	
		3	7	1		63	.9	
		4	26	1.4		24	.3	
		5	29	1.4		51	.7	
		6	52	2.4		6	.1	
		7	76	3.6		4	.1	
		8	53	2.5		5	.1	
		9	29	1.4		6	.1	
2		10	34	1.6		4	-	
		11	40	1.9		0	-	
		12	29	1.4		8	.1	
		13	29	1.4		4	-	
		14	58	2.7		0	-	
3		15	36	1.7		0	-	
		16	30	1.4	75	1	-	
		17	19	.9		0	-	
		18	28	1.3		4	-	
		19	20	.9		2	-	
4		20	32	1.5		2	-	
		21-25	94	4.4		7	.1	
		26-30	100	4.7		14	.2	
		31-35	117	5.5		12	.2	
		36-40	109	5.1	50	5	.1	
10		41-50	168	7.9		11	.1	
		51-60	102	4.8		18	.2	
		61-70	141	6.6		12	.2	
		71-80	106	5.0	25	5	.1	
		81-90	75	3.5		5	.1	1
20		91-100	80	3.8		13	.2	
		101-110	84	3.9		9	.1	
		111-120	70	3.3	10	9	.1	
		121-130	60	2.8		18	.3	
		131-140	45	2.1		9	.1	
30		141-150	39	1.8		0	-	
		151-160	65	3.1		5	1	
		More than 160	32	1.5	1	1	-	
Total 4/ Pieces			2129	100		7339	100	
Av: Mode Days			7.00			1.00		
Median Days			40.13			0.57		
Mean Days			54.51			2.80		
Range Days			1 to 176			1 to 164		

1/ Key to Stations:

- ①—Received in CSR
- ③—Recorded in CSR
- ④—Sent to Acquisitions
- ⑤—Received in Catalog
- ⑥—Received in Preparations

- ⑦—Received in I. D.
- ⑧—Indexed in I. D.
- ⑨—Typed
- ⑩—Proofread
- ⑪—Received in Lending
- ⑫—Received in Reference

- 2/ Same as day Received
- 4/ Pieces with invalid dates were omitted

PROCESSING OR TRANSIT TIME
For Pieces Received and Recorded in Current Serial Records
in the Period Nov. 1-30, 1962

Page 4 - Index and Documentation Division (Cont.)

Pieces with Lapse Time Measured Between Stations 1/

LAPSE TIME		Time Before Indexing Piece Marked "Circ" Copy From (7) to (8)			Time Before Indexing All Pieces From (7) to (8)			Time From Indexing to Typing From (8) to (9)			Time From Typing to Proofing From (9) to (10)		
Work Wks.	Work Days	Pieces No.	Percent of total		Pieces No.	Percent of total		Pieces No.	Percent of total		Pieces No.	Percent of total	
			Each Day Pct.	Not Yet Process. Pct.		Each Day Pct.	Not Yet Process. Pct.		Each Day Pct.	Not Yet Process. Pct.		Each Day Pct.	Not Yet Process. Pct.
1	0 2/	-			246	11.6	100	19	.9	100	95	4.5	100
	1	91	22.2	100	349	16.4	75	108	5.1		1179	56.1	50
	2	138	33.7	50	111	5.3		201	9.4		335	15.9	25
	3	28	6.8		63	3.0		149	7.1	75	195	9.3	
	4	33	8.0		43	2.0		136	6.4		106	5.0	10
	5	15	3.7	25	30	1.4		210	9.9		47	2.2	
	6	10	2.5		20	.9		54	2.6		19	.9	
	7	17	4.2		18	.9		83	3.9		39	1.9	
	8	7	1.7		16	.8		71	3.4	50	20	1.0	
	9	4	1.0		24	1.1		103	4.9		25	1.2	
2	10	4	1.0		16	.8		59	2.8		17	.8	
	11	7	1.7		14	.7		90	4.3		12	.6	1
	12	7	1.7		19	.9		58	2.7		1	-	
	13	9	2.2	10	24	1.1		47	2.2		-	-	
	14	7	1.7		11	.5		45	2.1		1	-	
3	15	1	.2		8	.4		40	1.9		1	-	
	16	1	.2		18	.8		38	1.8		5	.2	
	17	4	1.0		12	.6		53	2.5	25	1	-	
	18	3	.7		7	.3		44	2.1		-	-	
	19	3	.7		5	.2		34	1.6		-	-	
4	20	3	.7		17	.8	50	38	1.8		-	-	
5	21-25	9	2.2		75	3.5		134	6.4		2	1	
6	26-30	-	-		71	3.3		84	4.0	10	1	-	
7	31-35	3	.7		66	3.1		53	2.5				
8	36-40	1	.2		41	1.9		45	2.1				
10	41-50	1	.2	1	116	5.5		52	2.5				
12	51-60	2	.4		138	6.5		21	1.0				
14	61-70	2	.4		99	4.6	25	16	1.0				
16	71-80	1	.2		42	2.0		10	.4	1			
18	81-90				106	5.0		7	.3				
20	91-100				73	3.4		2	.1				
22	101-110				77	3.6	10	7	.3				
24	111-120				68	3.2							
26	121-130				39	1.8							
28	131-140				29	1.4	1						
30	141-150				13	.6							
32	151-160				2	.1							
More than 160													
Total 4/ Pieces					411	100		2126	100		2111	100	
Av: Mode Days					2.00			1.00			2.10		
Median Days					1.83			19.5			8.23		
Mean Days					5.65			36.2			13.4		
Range Days					0 to 79			0 to 160			0 to 104		
											0 to 64		

1/ Key to Stations:

- ① — Received in CSR
 ③ — Recorded in CSR
 ④ — Sent to Acquisitions
 ⑤ — Received in Catalog
 ⑥ — Received in Preparations

- ⑦ — Received in I. D.
 ⑧ — Indexed in I. D.
 ⑨ — Typed
 ⑩ — Proofread
 ⑪ — Received in Lending
 ⑫ — Received in Reference

- 2/ Same as day Received
 4/ Pieces with invalid dates
 were omitted

PROCESSING OR TRANSIT TIME
For Pieces Received and Recorded in Current Serial Records
in the Period Nov. 1-30, 1962

Page 5 - From Catalog and Records to Public Services

Pieces with Lapse Time Measured Between Stations 1/

LASPE TIME			From Recorded in CSR to Lending From ③ to ⑪						Total Time From Received in CSR to Lending ① to ⑪ All Pieces Recorded		
			For Pieces Skipping I D ⑦			For All Pieces Recorded					
			Pieces	Percent of total		Pieces	Percent of total		Pieces	Percent of total	
Work Weeks	or	Work Days	No.	Each Day Pct.	Not Yet Process. Pct.	No.	Each Day Pct.	Not Yet Process. Pct.	No.	Each Day Pct.	Not Yet Process. Pct.
1		0 <u>2/</u>	118	6.6	100	180	1.6	100	3	-	100
		1	1318	73.3	25	1624	14.4		42	4	
		2	174	9.7	10	5761	51.3	50	302	2.7	
		3	31	1.7		447	4.0		539	4.8	
		4	12	.7		362	3.2		788	7.0	
		5	11	.6		62	.6	25	890	7.9	75
		6	5	.3		47	.4		987	8.7	
		7	10	.6		83	.8		911	8.1	
		8	22	1.2		72	.6		886	7.8	50
		9	2	.1		72	.6		732	6.5	
2		10	2	.1		61	.5		573	5.1	
		11	46	2.6		109	1.0		679	6.0	
		12	6	.3		149	1.3		363	3.2	
		13	-			82	.7		338	3.0	
		14	-			71	.6		225	2.0	
3		15	2	.1		54	.5		170	1.5	25
		16	2	.1		70	.6		178	1.6	
		17	-			69	.6		127	1.1	
		18	-			20	.2		109	1.0	
		19	1	-		33	.3		89	.8	
4		20	7	.4		72	.7		62	.5	
	5	21-25	10	.6		120	1.1		325	2.9	
	6	26-30	-	-		111	1.0		126	1.1	
	7	31-35	2	.1	1	128	1.1		153	1.3	
	8	36-40	-	-		117	1.0		155	1.4	
10	41-50	5	.3		210	1.9	10	327	2.9		
12	51-60				119	1.1		190	1.7	10	
14	61-70	1			141	1.2		125	1.1		
16	71-80	2	.1		131	1.2		145	1.3		
18	81-90				81	.7		96	0.8		
20	91-100	1			100	1.0		100	0.9		
22	101-110	1			81	.7		103	.9		
24	111-120				81	.7		71	.6		
26	121-130				112	1.0		92	.8		
28	131-140	1			49	.4		85	.7		
30	141-150	1			38	.3		57	.5		
32	151-160	-			75	.7	1	50	.4	1	
	More than 160	5	.3		50	.4		101	.9		
Total 4/ Pieces			1798	100		11,244	10.0		11,294	100	
Av: Mode Days			1.00			2.00			6.00		
Median Days			.63			1.59			8.41		
Mean Days			2.79			14.2			20.6		
Range Days			0 to 169			0 to 268			0 to 294		

1/ Key to Stations:

- (1) — Received in CSR
(3) — Recorded in CSR
(4) — Sent to Acquisitions
(5) — Received in Catalog
(6) — Received in Preparations

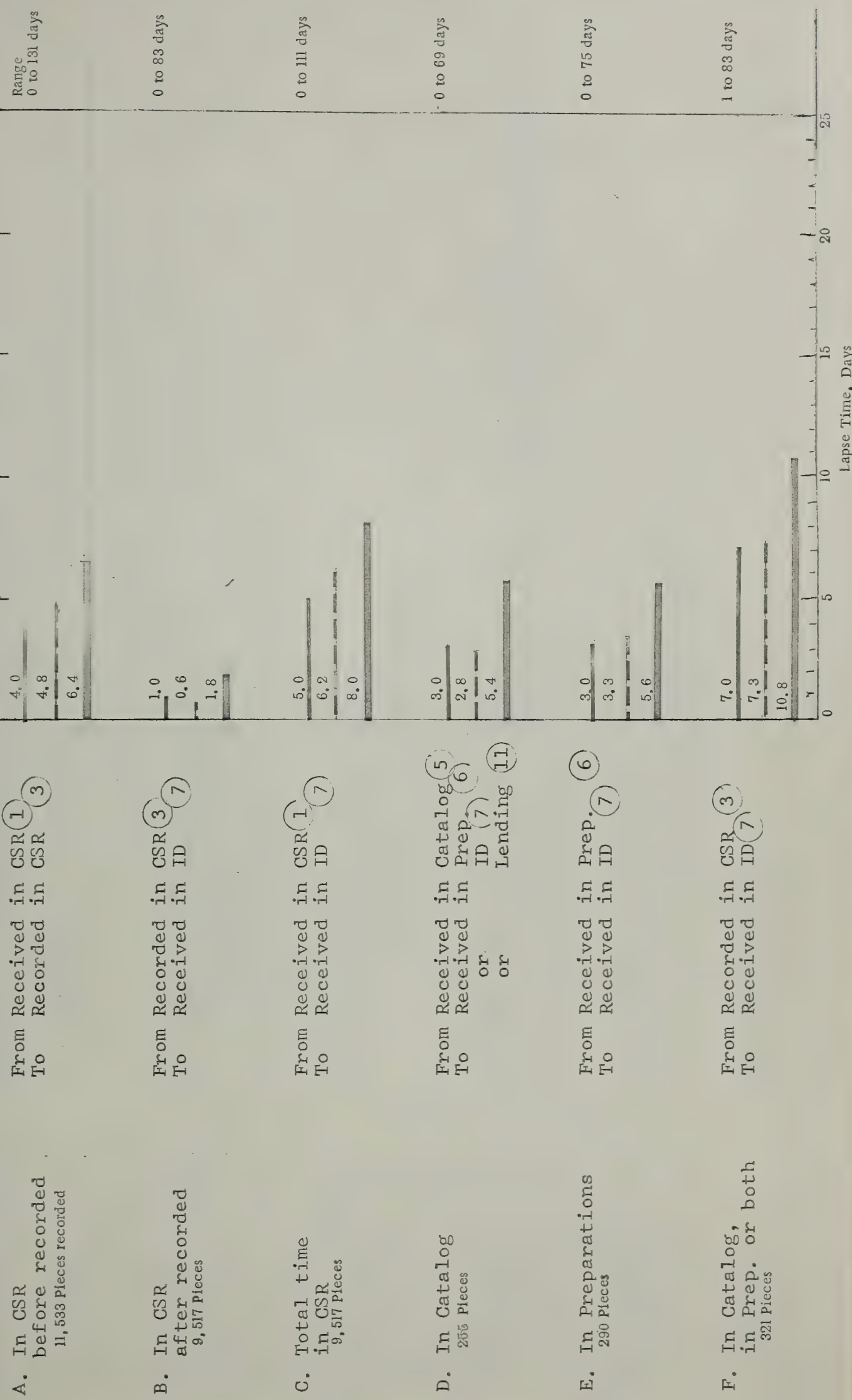
- (7) — Received in I. D.
(8) — Indexed I. D.
(9) — Typed
(10) — Proofread
(11) — Received in Lending
(12) — Received in Reference

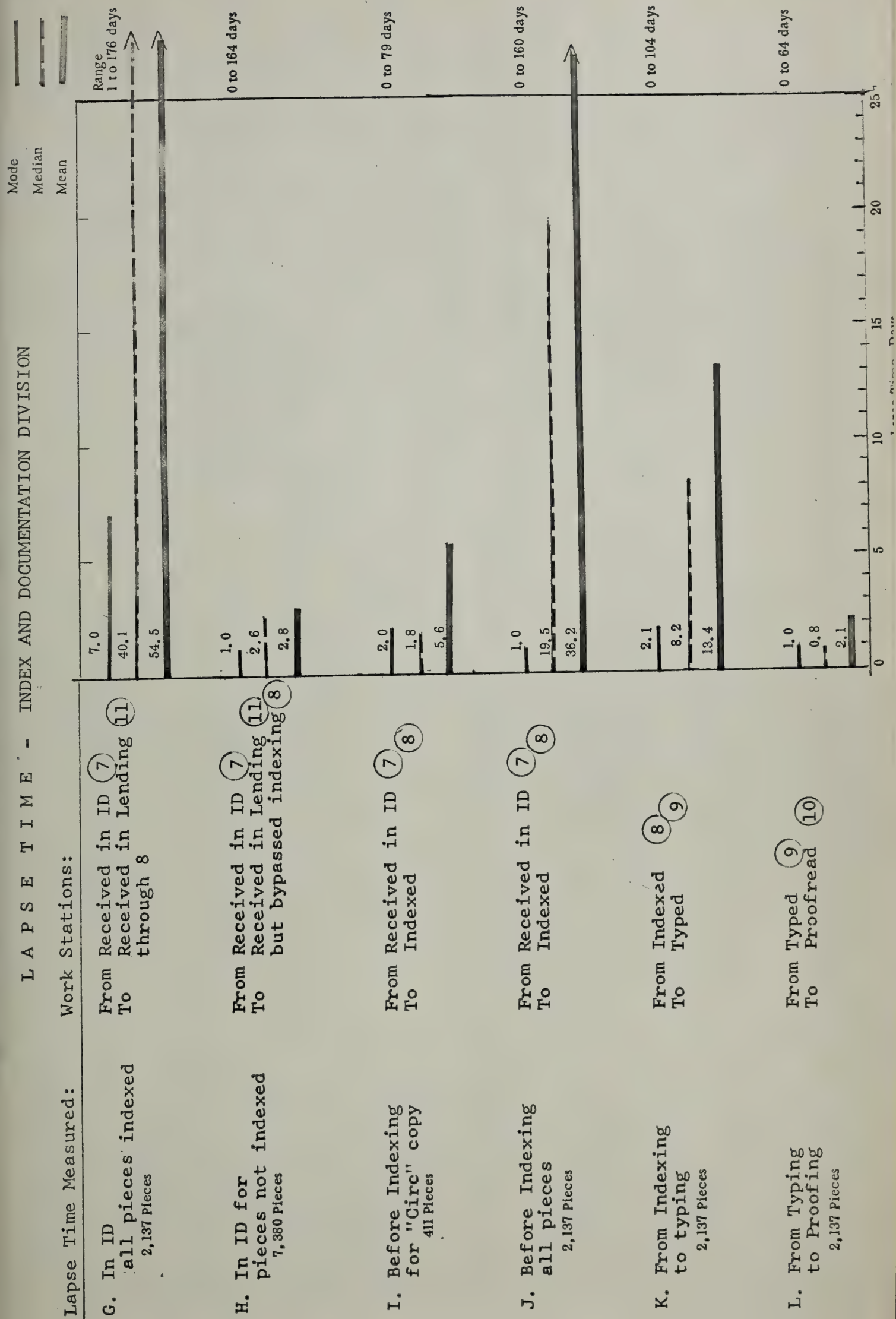
- 2/ Same as day Received
4/ Pieces with invalid dates
were omitted

L A P S E T I M E - C A T A L O G A N D R E C O R D S

Mode
Median
Mean

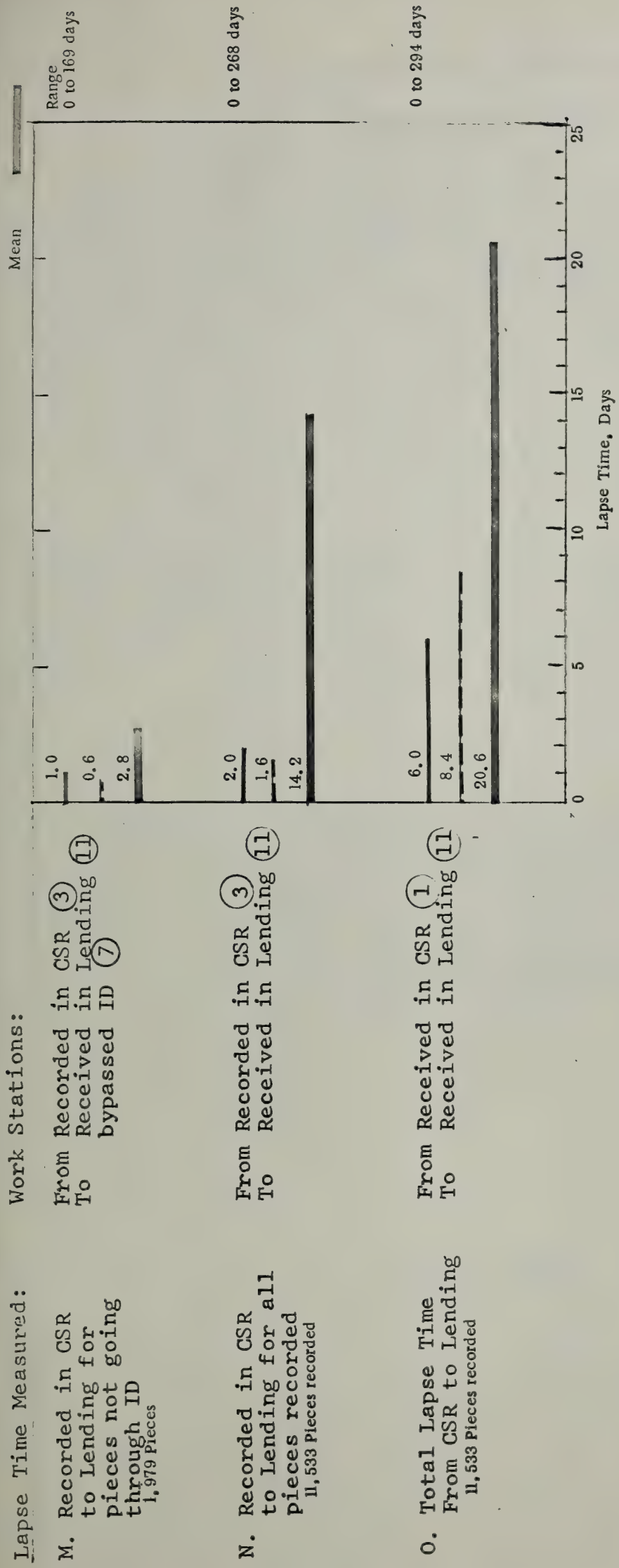
Lapse Time Measured: Work Stations:





L A P S E T I M E - C A T A L O G A N D R E C O R D S T O L E N D I N G

Mode
Median
Mean



SUMMARY - LAPSE DAYS FOR VARIOUS PERCENTAGES NOT YET PROCESSED 1/

Catalog and Records

Not Yet Processed Percent	Current Serial Records			Time In Catalog 5/ Days	Time In Prep. 6 to 7 Days	Time In Cat. Prep. or Both 6/ Days
	Before Pieces Recorded 1 to 3	After Pieces Recorded 3 to 7	Total Time 1 to 7			
	Days	Days	Days			
1	26-30	16	31-35	51-60	51-60	71-80
10	11	1	13	8	8	17
25	9		9	4	5	10
50	5		5	3	3	7
75	3		4	2	2	5
100 2/ Total pieces	0 3/(11,262) 4/ 11,533	0 (9433) 9,517	0 (9477) 9,517	0 (251) 255	0 (216) 254	1 (279) 290
Average, Days:						
Mode	4.00	1.00	5.00	3.00	3.00	7.00
Median	4.78	0.56	6.16	2.83	3.28	7.26
Mean	6.36	1.79	8.05	5.40	5.64	10.78
Highest, Days	131	83	111	69	75	83

Index and Documentation (I D)

Not Yet Processed Percent	Total Time In I D		Time Before Indexing		Indexing To Typing 8 to 9 Days	Typing To Proofing 9 to 10 Days
	Pieces Indexed 7-11 Thru 8	Pieces Not Indexed 7-11 Skip 8	Piece Marked "Circ" Copy 7 to 8	All Pieces 7 to 8		
	Days	Days	Days	Days		
1	164	8-90	41-50	131-140	71-80	11
10	111-120	1	13	101-110	26-30	4
25	71-80		5	61-70	17	2
50	36-40		2	20	8	1
75	16			1	3	-
100 2/ Total pieces	1 3/ (2129) 4/ 2137	0 (7339) 7380	1 (411) 411	0 (2126) 2137	0 (2111) 2137	0 (2103) 2137
Average, Days:						
Mode	7.00	1.00	2.00	1.00	2.10	1.00
Median	40.13	2.57	1.83	19.5	8.23	.82
Mean	54.51	2.80	5.65	36.2	13.4	2.14
Highest, Days	176	164	79	160	104	64

SUMMARY - LAPSE DAYS FOR VARIOUS PERCENTAGES NOT YET PROCESSED (Cont.)

From Catalog and Records to Lending

Not Yet Processed Percent	From Recorded in CSR To Lending		From Received in CSR To Lending For All Pieces Recorded (1) to (11) Days
	Pieces Skipped I D (3)-(11) Skip (7)	All Pieces Recorded (3)-(11)	
	Days	Days	
1	31-35	151-160	151-160
10	2	41-50	51-60
25	1	5	15
50		2	8
75			5
100 2/	0	100	100
Total pieces in Single Period	3/ 1798 4/ 1979	11,244 11,533	11,294
Average, Days:			
Mode	1.00	2.00	6.00
Median	.63	1.59	8.41
Mean	2.79	14.2	20.6
Highest, Days	169	268	294

1/ Key to Stations:

- | | |
|------------------------------|----------------------------|
| (1) Received in CSR | (7) Received in I. D. |
| (3) Recorded in CSR | (8) Indexed in I. D. |
| (4) Sent to Acquisitions | (9) Typed |
| (5) Received in Catalog | (10) Proofread |
| (6) Received in Preparations | (11) Received in Lending |
| | (12) Received in Reference |

2/ Same as day piece received

3/ Pieces with invalid dates were omitted

4/ Total Pieces that moved including invalid dates

5/ From (5) to (6) or (5) to (7) Skip (6), or direct to (11)

6/ From (3) to (7) through (5), or (6), or both

7/ Not included are 242 Pieces moved direct to Reference

Table T 17 also shows the mode, median, and mean averages as well as the highest lapse days recorded. Figure 14, 15, and 16 show graphically the 3 averages, and record the range and the number of pieces that were in the measurement.

The mode is the unit (lapse time) occurring the greatest number of times in an array; the median is the unit at the midpoint of an array; the arithmetic mean is the sum of the quantities divided by their number. The median and mode are a more significant measure of central tendencies than the arithmetic mean which is influenced greatly by the tag end pieces that took as long as 130 days although less than 1 percent remained to be processed after 30 days had lapsed.

The following are shown for time in or between stations in Catalog and Records:

- A. Time in CSR before piece recorded (1) - (3)
- B. Time in Catalog and Records after piece recorded (3) - (7)
- C. Total time in Catalog and Records (1) - (7)
- D. Time in Catalog
- E. Time in Preparations
- F. Time in Catalog and Records for pieces going through either Catalog, Preparations or Both

The time in CSR before recorded included the 9,517 pieces that went through I&D as well as the 2,016 that went directly to Lending making a total of 11,533 pieces used in the lapse time measurement in (A). Time in CSR after piece recorded (B) and total time in CSR (C) relates only to the 9,517 pieces that went through I&D. Lapse time was not measured for the pieces that moved directly to Lending from CSR.

Half of the pieces were processed "prior to recording in CSR" in 5 days (the median). Although the largest number of pieces (11.3%) were processed in 4 days (the mode) there was from 9 to 11 percent processed in each of the first 5 days. At the end of 2 weeks, 10 percent of the pieces had yet to be processed. Percentagewise this is good, but if the 1100 pieces waiting for action were weeklies this would need to be improved. The order of processing Table T 6 shows that it takes 3 weeks to get the bulk of one day's receipts past the recording station.

A study should be made to see if this could be reduced to 2 weeks or less -- Table T 6. Looking at the receipt date for pieces recorded on November 16th for example shows some of the pieces had been received as early as November 1. Pieces recorded on November 16th had been received on the following dates:

25	Pieces had been received on Nov. 1
94	On Nov. 2 (Friday)
55	5
36	6
110	7
6	8
33	9 (Friday)
76	13
111	14
2	15

Further study should be made of the batching practice to see if the lag in processing could be improved. Present system shows pieces received at the first of the month are being processed all during the month.

Pieces move quickly to I&D after processing if no further action in Catalog or Preparations is required. All but 10 percent has moved in 1 day. The total time for receipt in CSR to receipt in Lending is 5 days for the mode, and in 6 days half of the pieces have moved.

Time for Pieces Going Through Either Catalog or Preparations or Both --

As seen in the Volume Flow Chart relatively few pieces required Catalog or Preparations action but this required more time as many combinations of action were required. The 255 pieces that required time in Catalog regardless of other action ((5) to (6); (5) to (7) skip (6); or (5) to (11) direct) took from 0 (same day as received) to 69 days, with the averages ranging from 3 to 5-1/2. In 8 days all but 10 percent had been processed. The 254 pieces acted on in Preparations took up to 75 days but the averages showed from 3 to 6 days and the percentages not yet processed follow a pattern similar to time in Catalog. Many pieces that required Catalog action also needed Preparations action so that the total time between for pieces going thru either or both was: mode 7 days, median 7 days and mean 11 days. The 10 percent not yet processed was reached after 17 days had lapsed.

Time in I&D

The Lapse time measured in Index and Documentations where only 1/4 stop over for indexing for the Bibliography were as follows:

- G. Time in I&D for the 2,137 pieces indexed ⑦ - 11 thru ⑧
- H. Time in I&D for pieces not indexed ⑦-11 skip ⑧
- I. Time before indexing for "circ" copies ⑦ - ⑧
- J. Time before indexing for all copies ⑦ - ⑧
- K. Time from indexed to type ⑧ - ⑨
- L. Time from typing to proofing ⑨ - ⑩

Of the 7,380 pieces that were not indexed all but 5 percent moved through I&D in 2 days. The remaining 340 were spread out over 162 days. This small group represents pieces that are held for indexing but finally are not indexed due to the translation difficulties or are not ready in time to meet the tight time schedule of the monthly Bibliography of Agriculture, or the periodical loses its currency because of delays, hence is omitted from the B of A.

Of the 2,137 pieces indexed, there were 411 marked "circ" (to be circulated, therefore needs rush treatment) and these pieces are supposed to be expedited through I&D. To find out if this was true these pieces were identified and a comparison made -- see Table T 17. The median for "circ" copies was 2 days compared with 20 days for all copies, and the arithmetic mean was 6 days compared with 36 days. However 5 percent of the "circ" pieces took from 14 to 20 days, and 5 percent from 21 to 80 days. This should be improved if it occurs as a regular thing.

The time from indexing to typing measures publication delay after indexing. The Bibliography is published monthly which is generally a 20-day working cycle. In the first 20 days 80 percent of the pieces indexed had been typed and it can be assumed, included in the current issue of the B of A. The next 15 percent were typed by the end of 40 days to meet the next issue after the current one; and 34 percent waited for the third issue (60 days), while 42 pieces waited for the 4th or 5th issue. Some control should be exercised so that issues that are indexed do not wait beyond the second issue of the Bibliography.

Total Time From Receipt in CSR to Available to the Borrower in Lending

Of the 11,533 pieces received in November 1962 the largest number traveled to Lending in 6 days (mode), and half were received in Lending in 8-1/2 days. Twenty-five percent were not available to the Borrower in

15 days equivalent to 3 weeks; 10 percent were not available in 60 days or 12 weeks, and 1 percent (about 100 pieces) took more than 60 days.

This study indicates that most pieces are processed in a fairly short time but as high as 10 percent takes quite a long time. Special studies need to be made to determine how to identify and move along any periodical that has not reached Lending in say 1 month's time. Even a month's time is probably too long a delay for a weekly.

